

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AD38

Endangered and Threatened Wildlife and Plants; Determination of Endangered or Threatened Status for Four Plants From Southwestern California and Baja California, Mexico

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The Fish and Wildlife Service (Service) determines endangered status for one plant *Monardella linoides* ssp. *viminea* (willow monardella) throughout its historic range in southwestern California and northwestern Baja California, Mexico, and threatened status for three plants: *Acanthomintha ilicifolia* (San Diego thornmint), *Dudleya stolonifera* (Laguna Beach dudleya), and *Hemizonia conjugens* (Otay tarplant) throughout their historic ranges in southwestern California and northwestern Baja California, Mexico, under the Endangered Species Act of 1973, as amended (Act). These four species occur in coastal sage scrub, chaparral, and grassland habitats and are threatened by a variety of factors including urban and agricultural development, competition from nonnative plant species, off-road vehicle use, mining, grazing, and trampling by hikers. This rule implements the Federal protection and recovery provisions afforded by the Act for these four plant species.

DATES: This rule is effective on November 12, 1998.

ADDRESSES: The complete file for this rule is available for public inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, Carlsbad Field Office, 2730 Loker Avenue West, Carlsbad, California 92008.

FOR FURTHER INFORMATION CONTACT: Dr. Gary D. Wallace, Botanist (see **ADDRESSES** section) (telephone 760/431-9440; FAX 760/431-9624).

SUPPLEMENTARY INFORMATION:**Background**

Acanthomintha ilicifolia (San Diego thornmint), *Monardella linoides* ssp. *viminea* (willow monardella), and *Hemizonia conjugens* (Otay tarplant) occur in San Diego County, California, and northwestern Baja California, Mexico. *Dudleya stolonifera* (Laguna Beach liveforever) is restricted to the

San Joaquin Hills of Orange County, California. These species occur in coastal sage scrub, grasslands on clay soils, or in a mosaic of sage scrub, chaparral, and riparian scrub habitats.

Typically, areas with Mediterranean climates such as southern California have numerous rare, locally endemic (native) species (Cody 1986). Southern California has the highest concentration of locally endemic plant species in the United States (Gentry 1986) and currently has one of the highest human population growth rates in the country. From 1950 to 1990, the human population of San Diego County increased by 349 percent, and the population of Orange County increased by 1,015 percent (California Department of Finance 1993). Most of these increases occurred within or near sites historically occupied, in part, by coastal sage scrub. Between 1990 and 2015, the number of occupied housing units in San Diego County is expected to increase by 45 percent (City of San Diego and U.S. Fish and Wildlife Service 1996a).

By the 1980's, nearly 90 percent of the entire coastal sage scrub ecosystem in California had been lost (Westman 1981a, 1981b). In San Diego County, 95 percent of the native perennial grasslands and nearly 60 percent of the coastal sage scrub have been eliminated as a result of urban and agricultural development (Oberbauer and Vanderweir 1991, San Diego Association of Governments 1995). About 220,000 acres of coastal sage scrub remain in San Diego County (U.S. Fish and Wildlife Service, *in litt.* 1996).

Habitat destruction or modification adversely affects species native to this area by reducing population densities and contributing to habitat fragmentation. Rapid urbanization and agricultural conversion in Orange and San Diego Counties has already eliminated or reduced populations of the four plant species addressed in this final rule. The trend of habitat loss and fragmentation is expected to continue as the population of southern California expands. These species are also adversely affected by the invasion of nonnative plants, off-road vehicle (ORV) use, increased erosion, grazing, and trampling by humans.

Populations of these four species in Baja California are also threatened by land use practices. For example, Bowler (1990) and Oberbauer (1992) reported that coastal scrub vegetation in northern Baja California is being grazed, burned to increase grass production, and rapidly converted to row-crop agriculture or condominiums, campgrounds and resort housing. Rea

and Weaver (as cited in Atwood 1990) also noted that coastal sage scrub in Baja California “* * * has been seriously degraded by burning, grazing, and conversion to vineyards during the past two decades.”

Discussion of the Four Species

Acanthomintha ilicifolia (San Diego thornmint) was first described by Asa Gray (1872) as *Calamintha ilicifolia*, based on a specimen collected from “California, probably lower California.” Gray (1878) subsequently renamed the species *Acanthomintha ilicifolia*. This species is an annual aromatic herb of the mint family (Lamiaceae). Members of this genus have paired leaves and several sharply spined bracts (modified leaves) below whorled flowers. *Acanthomintha ilicifolia* can be distinguished from other members of the genus by its flower, which has hairless anthers and style. The tubular, two-lipped corollas (petals) are white with rose markings on the lower lip.

Acanthomintha ilicifolia usually occurs on heavy clay soils in openings within coastal sage scrub, chaparral and native grassland of coastal San Diego County and in isolated populations south to San Telmo in northern Baja California, Mexico (Beauchamp 1986; Reiser 1996; U.S. Fish and Wildlife Service, unpubl. data). *Acanthomintha ilicifolia* is frequently associated with gabbro soils which are derived from igneous rock and also occurs in calcareous marine sediments.

About 40 percent of 52 historic populations of *Acanthomintha ilicifolia* in the United States have been extirpated (i.e., no longer exist). Currently, there are about 150,000–170,000 individuals in 32 populations in the United States, ranging from San Marcos east to Alpine and south to Otay Mesa in San Diego County (California Native Natural Diversity Data Base (CNDDB) 1997, Reiser 1996, Roberts 1997a). This species occupies an estimated 156 hectares (ha) (400 acres (ac)). About 60 percent of the reported individuals are concentrated in four populations (Sycamore Canyon, Slaughterhouse Canyon, and two populations on Viejas Mountain). At least nine sites are known to have recently supported *A. ilicifolia* in Baja California, Mexico. The current status of this species in Mexico is uncertain.

Of the 32 extant populations of *Acanthomintha ilicifolia*, 11 are considered major populations (i.e., supporting over 3,000 individuals each). Four of these major populations are located within the Multiple Species Conservation Program (MSCP) planning subregion of southern San Diego

County, California. Two of these, Sabre Springs (private ownership) and Sycamore/Slaughterhouse canyons (San Diego County ownership) are adequately conserved by the MSCP (City of San Diego and U.S. Fish and Wildlife Service 1996b). Another population, Asphalt Inc. (private ownership) is in the MSCP outside the Multiple Habitat Preserve Area (MHPA) but will receive significant conservation benefits within the Metro-Lakeside-Jamul segment of the MSCP of the County of San Diego. The last of these four populations, Otay Lakes Northeast (private ownership) is not adequately protected. The remaining seven major populations are located either north or east of the MSCP subregion (CNDDDB 1997, Roberts 1997a). Of these seven major populations, four are located within lands managed by the Forest Service (on Viejas and Poser mountains). The three remaining major populations and the majority of the smaller populations are on lands managed by private landowners.

Dudleya stolonifera (Laguna Beach liveforever) was first described by Reid Moran (1949) based on a specimen he collected in 1948 from Aliso Canyon in Orange County. *Dudleya stolonifera* is a succulent perennial member of the stonecrop family (Crassulaceae) and has basal rosettes of flat, oblong, bright green leaves arising from a woody base. Its flowers have bright yellow-green petals that are fused near their base. *Dudleya stolonifera* is distinguished by its branching stolons (horizontal stems that root at the nodes) and lateral vegetative branches that arise from the basal rosette (Moran 1977).

Dudleya stolonifera is found only in the vicinity of Laguna Beach (Orange County) on steep cliffs in canyons. *Dudleya stolonifera* is primarily restricted to weathered sandstone rock outcrops on cliffs in microhabitats within coastal sage scrub or chaparral.

This species is known from only 6 populations, which collectively contain up to 10,000 individuals. Four of the six populations collectively contain over 95 percent of all known individual plants. Two populations of *Dudleya stolonifera* have been reduced by urban development. The westernmost portion and the main portion of the Aliso Gorge population have been eliminated. Approximately half of the Canyon Acres population of *D. stolonifera* has been cleared by the landowner (CNDDDB 1997).

The range of *Dudleya stolonifera* lies entirely within the boundaries of the Central/Coastal subregion of the State's Natural Communities Conservation Planning (NCCP) area. One of the four

major populations is within the lands designated as a preserve within the Central/Coastal subregion. This population is on a State ecological preserve predating the NCCP program. The other three major populations, representing about 70 percent of the individuals of this species, are found on private lands managed by nonparticipating landowners. One minor population is within lands designated as a preserve within the Central/Coastal subregion.

Hemizonia conjugens (Otay tarplant) was first described by David D. Keck (1958) based on a specimen collected by L.R. Abrams in 1903 from river bottom land in the Otay Valley area of San Diego. *Hemizonia conjugens*, a glandular, aromatic annual in the sunflower family (Asteraceae), has a branching stem from 5 to 25 centimeters (cm) (2.0 to 9.8 inches (in)) in height and deep green or gray-green leaves covered with soft, shaggy hairs. The yellow flower heads are composed of 8–10 ray flowers and 13–21 disk flowers with hairless or sparingly downy corollas (petals). The phyllaries (bracts, or modified leaves, below the flower head) are keeled with short-stalked glands and large, stalkless, flat glands near the margins. *Hemizonia conjugens* occurs within the range of *Hemizonia fasciculata* and *Hemizonia paniculata* (Tanowitz 1982). *Hemizonia conjugens* can be distinguished from these species in having 8–20 ray flowers.

Three of the 25 historic localities of *Hemizonia conjugens* in the United States are considered to be extirpated (Hogan 1990; Sandy Morey, Coordinator for the Endangered Plant Program, California Department of Fish and Game (CDFG), *in litt.* November 1994). It is likely, however, that other unreported populations have also been eliminated as about 70 percent of the suitable habitat for this species within its known range has been developed or is under cultivation. *Hemizonia conjugens* currently has a limited distribution near Otay Mesa in southern San Diego County, California; there is one known population near the United States border in Baja California, Mexico (Sandy Morey, Endangered Plants Program Coordinator, CDFG, *in litt.* 1994; CDFG 1994, Reiser 1996, CNDDDB 1997, Roberts 1997b).

Hemizonia conjugens distribution is highly correlated with the distribution of clay soils or clay subsoils (Sandy Morey, *in litt.* November 1994). This species is typically found in clay soils on slopes and mesas within native and mixed (native and nonnative) grassland or open coastal sage scrub habitats. The majority of *H. conjugens* populations are

associated with native grasslands, mixed grasslands (i.e., native grassland interspersed with nonnative grass species such as *Bromus diandrus* (ripgrut grass), *Bromus madritensis* (foxtail chess), and *Hordeum murinum* (hare barley)) and open, grassy coastal sage scrub.

About 11,930 ha (30,310 ac) of land with clay soils or clay subsoils are situated within the general range of *Hemizonia conjugens* in San Diego County (City of San Diego and U.S. Fish and Wildlife Service 1997). Clay soils are heavy (dense) and favor grassland development. It is likely that much of this area was once vegetated with native grassland and open and grassy coastal sage scrub, which provided suitable habitat for *H. conjugens*. About 4,200 ha (10,600 ac) (about 37 percent) of this area has been urbanized and about 4,155 ha (10,555 ac) (about 37 percent) has been cultivated. Although the cultivated lands could be restored to natural habitat capable of supporting *H. conjugens*, these areas do not currently support this species and are not likely to support the species in the foreseeable future based on proposed land use. Thus, only about 3,415 ha (8,530 ac) of habitat with the appropriate soils are currently available to the species. This represents about 30 percent of the historically available area (City of San Diego and U.S. Fish and Wildlife Service 1997). Fewer than 250 ha (650 ac) of areas with appropriate soil types are known to be occupied by *H. conjugens*.

Hemizonia conjugens, like many annual species, can vary significantly in numbers of individuals from one year to the next due to a variety of factors, including rainfall, timing of rainfall, and temperature. In the 22 extant populations in California, there may be as many as 300,000 individuals under favorable conditions (CNDDDB 1997, Roberts 1997b); however, the number of individuals in any given year is probably considerably less. Without knowledge of the species' demography, seedbank and seedbank dynamics, estimations of effective population size are impossible. Until its rediscovery in Baja California in 1977, this species was considered potentially extinct in California as a result of extensive development within its range (Tanowitz 1978).

Of the 22 extant populations of *Hemizonia conjugens* in California, 12 are considered major populations (i.e., having more than 1000 individuals). The largest population complex, Horseshoe Bend-Gobblers Knob (Rancho San Miguel), supports about 200,000 individuals, more than 65 percent of all

known plants. Although all individuals in the Rancho San Miguel complex have been reported as *Hemizonia conjugens*, variations in soil substrates suggest that about 23,000 individuals may be *Hemizonia paniculata* (OGDEN 1992a, Stone 1994, San Diego Gas and Electric 1995, Roberts 1997b). The five largest populations of *Hemizonia conjugens* (Horseshoe Bend-Gobblers Knob (Rancho San Miguel), Rice Canyon, Poggi Canyon, Proctor Valley, and Dennery Canyon) support about 94 percent of all reported individuals (OGDEN 1992a; Stone 1994; San Diego Gas and Electric 1995; Morey, *in litt.* 1994; City of San Diego and U.S. Fish and Wildlife Service 1996b; Roberts 1997b). Of the 17 remaining populations 7 are reported to support from 1,000 to 6,000 individuals each, and 10 support fewer than 1,000 individuals each. All populations of this species in the United States are on private lands.

Hemizonia conjugens appears to tolerate mild levels of disturbance such as light grazing (Dr. Barry Tanowitz, University of California, Santa Barbara, *in litt.* 1977; Hogan 1990). Such mild disturbances create sites necessary for germination (Tanowitz, *in litt.* 1977); however, the species is otherwise threatened by activities such as development and intensive agriculture.

Monardella linoides ssp. *viminea* was first described by Edward L. Greene (1902) as *Monardella viminea* based on a specimen collected by George Vasey in 1880. Greene (1906) later proposed the combination *Monardella viminea*. Munz (1935) reduced this taxon to the rank of variety as *Monardella linoides* ssp. *viminea*. Abrams (1951) published the currently accepted combination of *Monardella linoides* ssp. *viminea*.

Monardella linoides ssp. *viminea* is a perennial herb in the mint family (Lamiaceae) with a woody base and aromatic foliage. The leaves of this species are linear to lanceolate (lance-shaped). Greenish-white, often rose-tipped bracts are below dense terminal heads of pale white to rose-colored flowers. This species can be distinguished from other members of the genus by its glaucous (waxy) green, hairy stems and its conspicuously gland-dotted bracts.

Monardella linoides ssp. *viminea* often grows in sandy washes and floodplains and is frequently associated with *Eriogonum fasciculatum* (California buckwheat), *Platanus racemosa* (sycamore), *Quercus agrifolia* (coast live oak), *Artemisia californica* (California sagebrush), and *Baccharis sarothroides* (coyotebush) (Scheid 1985). *Monardella linoides* ssp. *viminea*

primarily inhabits washes in coastal sage scrub or riparian scrub habitats.

Populations of *Monardella linoides* ssp. *viminea*, which are concentrated in the Miramar area of San Diego County, extend south into Baja California, Mexico. This species was previously known from 27 occurrences in the United States. Approximately 6,000 individuals of *M. linoides* ssp. *viminea* from 20 occurrences are thought to currently exist in the United States (Reiser 1996, CNDDDB 1997). All populations, with the exception of 2 populations of approximately 200 individuals each (Cedar Canyon and Marron Valley) occur between Penasquitos Canyon and Mission Gorge in San Diego County. Fifteen populations have fewer than 100 plants, and 6 of these populations contain fewer than 15 individuals. Most populations occur on Federal land at Marine Corps Air Station, Miramar, including one of the largest populations. About 1,700 individuals were reported at that locale in 1994 (R.G. Fahey, Lieutenant Commander, CEC, U.S. Navy, *in litt.* 1995). One population occurs near Arroyo Jatay in northern Baja California, Mexico.

Previous Federal Actions

Federal government action on the four plant species considered in this rule began with section 12 of the Act, which directed the Secretary of the Smithsonian Institution to prepare a report on those plants considered to be endangered, threatened, or extinct. This report (House Document No. 94-51) was presented to Congress on January 9, 1975, and included *Acanthomintha ilicifolia*, *Dudleya stolonifera*, *Monardella linoides* ssp. *viminea*, and *Hemizonia conjugens* as endangered. The Service published a notice on July 1, 1975 (40 FR 27823) of its acceptance of the report of the Smithsonian Institution as a petition (under section 4(c)(2) of the Act, but now covered under section 4(b)(3)) and of the Service's intention to review the status of the plant species named in the report. On June 16, 1976, the Service proposed to determine approximately 1,700 vascular plant species, including *A. ilicifolia*, *D. stolonifera*, *H. conjugens*, and *M. linoides* ssp. *viminea*, to be endangered species (41 FR 24523) as defined by section 4 of the Act. General comments received in response to the 1976 proposal were summarized in an April 26, 1978, notice (43 FR 17909).

The Act amendments of 1978 required that all proposals over two years old be withdrawn. A one-year grace period was given to those proposals already more than two years old. In a December 10,

1979 notice (44 FR 70796), the Service published a notice of withdrawal of the outstanding portion of the June 16, 1976, proposal, including the four species considered in this listing.

The Service published an updated Notice of Review of plants on December 15, 1980 (45 FR 82480). This notice included *Acanthomintha ilicifolia*, *Dudleya stolonifera*, *Hemizonia conjugens*, and *Monardella linoides* ssp. *viminea* as category 1 candidates (i.e., those species for which substantial information on biological vulnerability and threats is available to support preparation of listing proposals).

The 1982 amendments to the Act required that all petitions pending on October 13, 1982, be treated as having been newly submitted on that date (section 2(b)(1)). The 1975 Smithsonian report, including the four subject species, was accepted as a petition. The Service is required to determine within 12 months of the receipt of a petition (section 4(b)(3)(B)) whether the petitioned action is not warranted, is warranted, or is warranted but precluded by other pending listing actions of higher priority (section 4(b)(3)(B)(iii)). On October 13, 1983, the Service found that the petitioned listing of these species was warranted but precluded and published the notification of this finding on January 20, 1984 (49 FR 2485). A warranted but precluded petition must be recycled (section 4(b)(3)(C)(1)), and the finding was reviewed annually from October of 1984 through 1992.

On November 28, 1983, the Service published (48 FR 53640) a supplement to the 1980 Notice of Review. This supplement treated *Acanthomintha ilicifolia*, *Monardella linoides* ssp. *viminea*, and *Hemizonia conjugens* as category 2 candidates (i.e., species for which data in the Service's possession indicated listing was possibly appropriate but for which substantial information on biological vulnerability and threats were not known or on file to support preparation of proposed rules). *Dudleya stolonifera* was not included as either a category 1 or category 2 candidate in the 1983 Notice of Review.

In the September 27, 1985 revised Notice of Review for plants (50 FR 39526), *Dudleya stolonifera* was included as a category 1 species, and *Acanthomintha ilicifolia*, *Hemizonia conjugens*, and *Monardella linoides* ssp. *viminea* were included as category 2 species. Enough data were subsequently gathered to include *A. ilicifolia* as a category 1 species in the February 21, 1990, Notice of Review (50 FR 45242).

On December 14, 1990, the Service received a petition dated December 5, 1990, from Mr. David Hogan of the San Diego Biodiversity Project, to list *Hemizonia conjugens* as endangered. The petition also requested designation of critical habitat. On January 7, 1991, the Service received another petition from Mr. Hogan, dated December 30, 1990, to list *Acanthomintha ilicifolia* as endangered. This petition also requested designation of critical habitat. *Acanthomintha ilicifolia* and *H. conjugens* were included in the Smithsonian Institution's Report of 1975 that had been accepted as a petition. The Service, therefore, regarded Mr. Hogan's petitions to list these two species as second petitions.

In the September 30, 1993 Notice of Review revision (58 FR 51144), *Dudleya stolonifera* and *Acanthomintha ilicifolia* remained as category 1 candidate species, and *Hemizonia conjugens* and *Monardella linoides* ssp. *viminea* remained as category 2 candidate species. The Service made a final "not warranted" finding on the 1975 petition with respect to *A. ilicifolia*, *M. linoides* ssp. *viminea*, and 863 other species in the December 9, 1993, **Federal Register** (58 FR 64828). This finding was based on the lack of data relating to current threats throughout a significant portion of the species' ranges (i.e., one of the five factors described within the proposed rule under 50 CFR 424.11). These species were retained in category 2 on the basis that they may be subject to extinction or endangerment from loss of habitat or from other human-caused changes to their environment (58 FR 64840). Use of the category 2 designation was discontinued in the February 28, 1996, Notice of Review (61 FR 7596).

In 1994, the Service obtained complete data that adequately described those factors that placed *Acanthomintha ilicifolia* and *Monardella linoides* ssp. *viminea* at risk of extinction. The Service ultimately responded to the Smithsonian and Hogan petitions by publishing a proposed rule to list *Acanthomintha ilicifolia*, *Dudleya stolonifera*, *Hemizonia conjugens*, and *Monardella linoides* ssp. *viminea* as endangered in the **Federal Register** on August 9, 1995 (60 FR 40549). On April 10, 1995, a moratorium on final listings was imposed by Congress. Until the moratorium was lifted on April 26, 1996, the Service was not allowed to complete any final listing actions.

The Service published Listing Priority Guidance for Fiscal Years 1998 and 1999 on May 8, 1998 (63 FR 25502). The guidance clarifies the order in which the Service will process rulemakings giving

highest priority (Tier 1) to processing emergency rules to add species to the Lists of Endangered and Threatened Wildlife and Plants (Lists); second priority (Tier 2) to processing final determinations on proposals to add species to the Lists, processing new proposals to add species to the Lists, processing administrative findings on petitions (to add species to the Lists, delist species, or reclassify listed species), and processing a limited number of proposed or final rules to delist or reclassify species; and third priority (Tier 3) to processing proposed or final rules designating critical habitat. Processing of this final rule is a Tier 2 action.

Summary of Comments and Recommendations

In the August 9, 1995, proposed rule (60 FR 40549) and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. The comment period closed on October 9, 1995. Appropriate State agencies, County governments, Federal agencies and other interested parties were contacted and requested to comment. Public notices announcing the publication of the proposed rule were published in the San Diego Union Tribune in San Diego County on August 11, 1995, and the Orange County Register on August 16, 1995. No request for a public hearing was received.

A total of 20 written comments was received. Four commenters did not address the proposed listing action directly, or support or oppose the listing of these species. Ten commenters supported the listing, and 6 commenters opposed the proposed listing; however, only 8 of the 16 commenters supporting or opposing the listing addressed all 4 species. Information from a number of these comments has been incorporated into the final rule. The Service's responses to each of 12 relevant issues raised in these comments are as follows.

Issue 1: One commenter expressed concern that the proposed listing of these plants appeared to be in response to litigation and not objective science. This comment apparently is in reference to a court settlement with the California Native Plant Society to render decisions on 159 category 1 plant species by March 31, 1996. This same commenter also expressed concern that there was inadequate staff resources to properly analyze data relevant to the decision-making process. The commenter cited "significant deficiencies" in the database upon which the Service relied

to determine if these species should be listed.

Service Response: The Service disagrees that there are significant deficiencies in the data used in the decision-making process for the four species listed in this rule. The commenter did not supply any data that would have changed the Service's finding.

The court settlement with the California Native Plant Society did influence the timing of the review of the current status of *Dudleya stolonifera* and *Hemizonia conjugens*; however, *Acanthomintha ilicifolia* and *Monardella linoides* ssp. *viminea* were not part of the original lawsuit settlement. The Service determined that these species would likely qualify for listing as endangered species as early as 1976 (see "Previous Federal Action" section of this rule). Actions of higher priority precluded a review of the status of these species for nearly two decades. The lawsuit settlement prompted the Service to review *D. stolonifera* and *H. conjugens* and 157 other species as high priority actions. The lawsuit, however, did not require any specific action with regard to the 159 species, only that the conservation status of each species be resolved through publication of a "not warranted" finding or a proposed rule to list the species. A review of the data in the Services' files and data obtained during 1992 and 1993 demonstrated that *A. ilicifolia* and *M. linoides* ssp. *viminea* also needed protection under the Act and resulted in publication of a proposed rule to list these species in 1995.

The Service acknowledges that botanical staff resources were limited at the time the settlement was concluded in 1991, and this limitation resulted in delays. In addition, Congress imposed a listing moratorium from April 10, 1995, through April 26, 1996, which precluded the Service from rendering final listing decisions. Subsequent to the lifting of the moratorium, the Service had inadequate staff and funding to process the backlog of final listing actions (243 proposed species) that accumulated because of the moratorium; other listing activities (petition findings, new proposals of candidates species, and withdrawals) were delayed, as well. In response, the Service adopted guidelines for the processing of listing actions.

Issue 2: One commenter claimed that the proposed rule both ignored important existing population data and lacked sufficient population data to support a listing of *Acanthomintha ilicifolia*, *Hemizonia conjugens*, and *Monardella linoides* ssp. *viminea*. The

commenter noted that, although the proposed rule claimed that there were 20 extant populations of *A. ilicifolia*, the MSCP data base contains 41 populations. The commenter stated that the MSCP localities for the southwestern quarter of San Diego County alone is twice the previous Service estimate for the entire U.S. range. One commenter claimed to have supplied the CDFG with data on the status of 25 populations of *H. conjugens*. The commenter asserted that the estimate of 15 extant populations of *H. conjugens* in the proposed rule is an underestimate and an indication that the Service did not use all available data in its analysis. The commenter also noted that the Service failed to provide an estimate for the number of individuals of *H. conjugens*.

Service Response: In preparation of the MSCP database maps, "points" were applied to represent species localities. A point may describe information ranging from an individual plant, a population, or an undefined number of individuals, unless specifically defined. A cluster of points may represent colonies or individuals in proximity that are not necessarily discrete populations. "Points" are also known to represent isolated or fragmented populations that have been significantly reduced, or in some cases, are recently extirpated localities. Differences in numbers of "points" between the MSCP database (based on unpublished data supplied by OGDEN in 1996) and figures used in the proposed rule (based on a variety of sources) result from differences in defining populations.

Thirty-nine *Acanthomintha ilicifolia* "points" are reported in the most recent MSCP database (City of San Diego and U.S. Fish and Wildlife Service 1996b; U.S. Fish and Wildlife Service, unpubl. data). The Service has determined that these 39 "points" or point locations constitute 15 of the 32 currently known extant populations of *A. ilicifolia* in the U.S. The remaining 17 populations are located outside of the MSCP planning area. A number of populations of *A. ilicifolia* were not known at the time the proposed rule was prepared. However, these new localities face the same threats as previously known populations, therefore, the status of the species has not significantly improved.

The Natural Heritage Division of CDFG has reported Rancho San Miguel (Horseshoe Bend-Gobblers Knob) as supporting four separate occurrences of *Hemizonia conjugens* (CNDDDB 1997). The MSCP database represents these populations with 20 "points." Because of their proximity and similarity in habitat, the Service is treating "points"

in this complex as a single extended population for purposes of this document. A single extended population of *H. conjugens* is recognized by the Service and CDFG within the Otay River Valley. This population is represented by 43 "points" within the MSCP database. A recent survey of this population located only 10 individual plants (Stone 1994). A discussion regarding population estimates for *Hemizonia conjugens* has been included under the "Discussion of the Four Species" section of this rule. The Service is currently aware of 22 extant populations of *H. conjugens*, 7 more than were known in 1994. Although the number of known sites has increased, the majority of the new localities are also threatened; therefore, the status of the species has not significantly improved.

The commenter did not supply substantive information regarding *Monardella linoidea* ssp. *viminea*; however, the species' distribution is fairly well-known. Although other populations may eventually be found, the Service considers the data available to be sufficient. Only 5 of the 20 extant populations have at least 100 individuals. The Service believes this reduction in numbers and distribution of *M. linoidea* ssp. *viminea* combined with threats to the remaining populations (urban development, sand and gravel mining, ORVs, fire, trampling, trash dumping, and erosion) support the listing of this species as endangered.

Issue 3: One commenter claimed that the Service was obliged to survey thoroughly for the three San Diego County species before reaching a final decision regarding the listing of the three species. The commenter noted that the proposed rule indicated that *Acanthomintha ilicifolia* is frequently associated with gabbro clay soils and occurs in calcareous marine sediments. Data compiled for the MSCP indicate that the majority of these areas occur east of substantial development within the subregion and that many of these areas have not been systematically surveyed for *A. ilicifolia*. The commenter argued that these areas should be thoroughly surveyed before a final decision can be reached. The commenter also questioned the known status of *A. ilicifolia*, *Hemizonia conjugens*, and *Monardella linoidea* ssp. *viminea*, in Baja California, Mexico, claiming that the Service has not demonstrated that thorough surveys have been conducted in these areas.

Service Response: The Service concludes, as detailed in the "Background" and "Summary of Factors

Affecting the Species" sections of this rule, that sufficient biological data exist to warrant listing of the three plant species under the Act. Although the Service acknowledges that additional populations of these rare plant species may be discovered in San Diego County, California, it is likely that these populations would be subject to the same threats that currently place known populations at risk. For example, existing data indicate that *Monardella linoidea* ssp. *viminea* primarily occurs in washes at low elevations along the coast. The species is unlikely to be found at the higher elevations along the eastern boundary of the MSCP subregion where appropriate habitat is uncommon. Additional unreported populations of this species would likely be situated in areas subject to urbanization and related impacts.

The general distribution limits of *Hemizonia conjugens* are fairly well-understood. Significant populations of this species are not likely to occur at higher elevations along the eastern border of the MSCP due to a lack of preferred habitat (mesas and rolling hills with clay soils or clay subsoils). Although additional populations may be located within the range of *H. conjugens*, these populations would likely be threatened given the current nature and extent of fragmentation, cultivation, and proposed urbanization throughout the range of the species.

Of the three San Diego taxa, only *Acanthomintha ilicifolia* has significant favorable habitat occurring along the eastern boundary of the MSCP and Multiple Habitat Conservation Plan (MHCP) subregions. Recent discoveries indicate that additional significant populations of this species may occur in the vicinity of Alpine and Sycamore Canyon. The Service has considered this information in listing this species as threatened rather than endangered as proposed. Nevertheless, the majority of historic populations of *A. ilicifolia* were in western San Diego County, California, and nearly half have been extirpated. Data within the Service's files indicate that much of the undeveloped habitat within the range of this species is likely to be urbanized, or to be in proximity to urbanization in the foreseeable future.

Although the flora of northwestern Baja California has received less scrutiny than that of Alta California, several botanists (notably Reid Moran formerly of the San Diego Natural History Museum) have made extensive surveys in coastal areas between Tijuana and El Rosario, Mexico. There are numerous collections of plants from Mexico in the herbaria of the Rancho

Santa Ana Botanic Garden in Claremont, California, and the San Diego Natural History Museum in San Diego, California. All localities cited within the proposed rule are based on collection records. Although it is possible that other populations of all three species exist in coastal Baja California, all three species are restricted to specific habitats or have very restricted ranges.

Hemizonia conjugens is known only from a single locality east of Tijuana (La Presa) and is not expected to occur farther than 16 kilometers (km) (10 miles (mi)) south of the U.S. border. This area has been subject to substantial urban and agricultural impacts (Dirección de Planeación del Desarrollo Urbano y Ecológica and San Diego Association of Governments (SANDAG) 1996). *Acanthomintha ilicifolia* and *Monardella linoides* ssp. *viminea* are more broadly distributed in Baja California. The preferred habitat for these species, however, is limited and found in isolated patches.

Issue 4: One commenter claimed that the Service was applying unreliable data and selective anecdotal speculation regarding threats to these plants in Baja California, Mexico.

Service Response: The threats to the flora of northwestern Baja California are well-documented and extensively discussed in recent publications (Bowler 1990, RECON 1991b, Oberbauer 1992). Habitat between Tijuana and Ensenada, Mexico, and in the vicinity of San Quintin, MX is being converted to urban, recreational and agricultural development (Oberbauer 1992). Impacts of expanding cultivation and urbanization are also evidenced through satellite imagery of the vicinity of Tijuana and La Presa (Dirección de Planeación del Desarrollo Urbano y Ecológica and San Diego Association of Governments (SANDAG) 1996). This area includes the only known population of *H. conjugens* in Baja California, Mexico.

Monardella linoides ssp. *viminea* and *Acanthomintha ilicifolia* both occur in the vicinity of San Quintin. Satellite imagery documents that about 49,500 ha (124,000 ac) of coastal plain in this region had been converted to cultivation and urbanization by 1974 (U.S. Fish and Wildlife Service, unpubl. data). The San Quintin kangaroo rat (*Dipodomys gravipes*), a coastal lowland-associated species endemic to the Baja California, Mexico, from San Telmo to El Rosario, is nearly extinct as a result of this change in land use (Best 1983). More recent satellite imagery (Earth Satellite Corporation 1994) documented approximately 5,450 ha (13,600 ac) of additional habitat conversion on the

coastal plain and adjacent foothills by January 1994.

Issue 5: One commenter stated that the Service failed to establish minimum viable population size for *Hemizonia conjugens*, *Acanthomintha ilicifolia*, and *Monardella linoides* ssp. *viminea*. Without an estimate of the minimum viable population size and distribution, “* * * the public is unable to determine what the Service believes constitutes a population size and distribution threatening or endangering the continued existence of these species * * *”.

Service Response: A minimum viability population analysis may be useful for developing a recovery plan for some species (Shaffer 1990), but is not necessary to determine whether a species should be listed. A minimum viability population analysis does not address existing and foreseeable threats to species that are key factors in determining whether a species should be listed under the Act (see “Summary of Factors Affecting the Species” section of this rule).

Issue 6: One commenter stated that the Service did not correctly analyze the degree of threat to *Hemizonia conjugens*, *Acanthomintha ilicifolia*, and *Monardella linoides* ssp. *viminea* inferred from past and projected population growth in San Diego County. Although the Service has relied on SANDAG estimates that the number of occupied housing units in San Diego County would increase 69 percent between 1990 and 2015, the commenter noted that the May 1995 draft EIR/EIS for the San Diego MSCP predicted that the San Diego metropolitan area will increase by only 18 percent between 1990 and 2005. The commenter stated that population growth in residential and commercial development in San Diego County has “significantly slowed since 1990” and suggested that the earlier SANDAG figure significantly overstates the current best estimates for growth.

Service Response: Population growth estimates by SANDAG represent the best available population growth estimates for the region and are used extensively by local County and municipal jurisdictions in local and regional planning. Because the Service does recognize that growth projections are dynamic, we have incorporated the most recently available figures on population growth into this rule. The August 1996 final EIR/EIS for the MSCP estimates a population increase of 21 percent for the population of the City of San Diego from 1990 to 2005 (City of San Diego and U.S. Fish and Wildlife Service 1996a). The projected growth for

the same area from 1990 to 2015 is 42 percent. The cited document also reveals that population growth is projected to increase 50 percent in the San Diego region from 2.5 million people to 3.8 million people. Occupied housing units are estimated to increase 45 percent in San Diego County from 1990 to 2015. Although these numbers are lower than the earlier SANDAG estimates, they clearly indicate that the region will be subject to significant population growth, which is likely to contribute to the further decline of the three plant species and their habitats.

Issue 7: One commenter questioned the accuracy of the reference (Oberbauer and Vanderweir 1991) cited by the Service for purposes of documenting and analyzing the loss of historic native grasslands in the San Diego Region.

Service Response: The Service has determined that Oberbauer and Vanderweir (1991) based their conclusions on data gathered utilizing acceptable scientific methods.

Issue 8: One commenter claimed that the listing proposal did not present an adequate discussion and analysis, with the exception of the California gnatcatcher, on the protections afforded *Acanthomintha ilicifolia*, *Hemizonia conjugens*, and *Monardella linoides* ssp. *viminea* from other federally listed species. The commenter specifically requested that the Service analyze the protections afforded by the listings of *Arctostaphylos glandulosa* ssp. *crassifolia* (Del Mar manzanita), *Baccharis vanessae* (Encinitas baccharis), *Chorizanthe orcuttiana* (Orcutt's spineflower), *Corethrogyne filaginifolia* var. *linifolia* (Del Mar aster), *Dudleya blochmaniae* ssp. *brevifolia* (short-leaved dudleya), *Navarretia fossalis* (spreading navarretia), *Pogogyne abramsii* (San Diego mesa mint), *P. nudiuscula* (Otay mesa mint), Riverside fairy shrimp (*Streptocephalus wootoni*), Harbison's Dunne skipper (*Euphyes vestris harbisoni*), Thorne's hairstreak butterfly (*Mitoura thornei*), arroyo toad (*Bufo microscaphus californicus*), California red-legged frog (*Rana aurora daytonii*), least Bell's vireo (*Vireo bellii pusillus*), Pacific pocket mouse (*Perognathus longimembris pacificus*), and Stephens' kangaroo rat (*Dipodomys stephensii*).

Service Response: The proposal to list *Corethrogyne filaginifolia* var. *linifolia* (Del Mar aster) and *Dudleya blochmaniae* ssp. *brevifolia* (short-leaved dudleya) was withdrawn on October 7, 1996 (61 FR 52402). These species confer no Federal protections on *Acanthomintha ilicifolia*, *Hemizonia conjugens*, or *Monardella linoides* ssp. *viminea*. Additionally, the ranges of the

two withdrawn species do not overlap those of the species listed in this rule. Harbison's Dunne skipper (*Euphyes vestris harbisoni*) and Thorne's hairstreak butterfly (*Mitoura thornei*) are not listed nor have these species ever been proposed for Federal listing. Therefore, these two butterfly species confer no protection on the plants listed in this rule. Although the Stephens' kangaroo rat (*Dipodomys stephensi*) is listed as an endangered species, the range of the Stephens' kangaroo rat is not known to overlap with any of the four plant species listed in this rule. None of the other 11 federally listed species mentioned by the commenter are found in the same habitat as the 4 species addressed in this rule; therefore, protections for those listed species do not confer any direct protection to the four species being listed by this rule. An analysis of potential protection indirectly conferred on these plants from the other listed species has been expanded in Factor D of the "Summary of Factors Affecting the Species" section of this rule.

Issue 9: Two respondents claimed that the Service failed to analyze the expected impact of a listing on the regional NCCP habitat conservation programs, or expressed concern that the listings would result in a negative impact on these programs. One commenter alleged that the action of listing three of the plant species could preclude approval of the MSCP and, therefore, result in jeopardy to the species' continued existence.

Service Response: The Service actively supports multispecies planning efforts to avoid or reduce the need for future listing actions within designated planning areas. However, the Service is required to determine whether a species is endangered or threatened based solely on the applicability of the five factors listed under section 4(a)(1) of the Act. Significant populations of three species (*Acanthomintha ilicifolia*, *Dudleya stolonifera*, and *Monardella linoidea* ssp. *viminea*) listed in this rule are outside the geographical limits of approved or nearly completed multispecies conservation plan areas (MSCP or Central/Coastal NCCP), or are not under the jurisdiction of these plans.

Acanthomintha ilicifolia is considered adequately conserved within jurisdictions with approved subarea plans in the MSCP subregion and, therefore, no additional mitigation is required to protect the species within these jurisdictions. About 55 percent of the United States populations (and about 65 percent of the major

populations), however, are outside the MSCP subregion.

The distribution of *Dudleya stolonifera* lies entirely within the Central/Coastal NCCP subregion of Orange County. The species is considered a "covered species" (species that will be adequately conserved by the plan's proposed preservation and management) under the Central/Coastal NCCP with respect to planned activities carried out by participating landowners because protection of the species is assured under the plan on lands owned and managed by such landowners. However, only one of four major populations of *D. stolonifera* within the Central/Coastal NCCP is on land owned by a participating landowner. The plan does not extend coverage or ensure protection of this species on lands owned by nonparticipating landowners in the subregion.

The entire U.S. distributions of *Hemizonia conjugens* and *Monardella linoidea* ssp. *viminea* occur within the MSCP subregion. Nearly 80 percent of the populations of *M. linoidea* ssp. *viminea*, however, are found on Marine Corps Air Station, Miramar lands not under jurisdiction of the MSCP, and, although *H. conjugens* is a covered species under the MSCP, the potential impacts of projects that are not subject to the jurisdiction of the MSCP (see Factor D of the "Summary of Factors Affecting the Species" section of this rule) are very important to the long-term survival of this species. The listing of *H. conjugens* and *M. linoidea* ssp. *viminea* will not adversely affect jurisdictions with approved subarea plans under the MSCP because these species are "covered" under the MSCP, and therefore no additional mitigation is required to protect the species in these jurisdictions. Thus, the listing of *Acanthomintha ilicifolia*, *Dudleya stolonifera*, and *Monardella linoidea* ssp. *viminea* will not have a negative impact on the MSCP and Central/Coastal NCCP because the Service has determined that populations of these species covered by these plans will be adequately protected by the participating jurisdictions and/or participating landowners; no additional mitigation will be required of these participants. The significant threats faced by species outside of the geographical or regulatory jurisdictions of the approved plans warrant the listing of these species.

Issue 10: One commenter stated the Service should not add *Dudleya stolonifera* to the endangered species list because one of the threats cited was competition from nonnative plant species. The commenter stated that

competition is a natural process, and therefore "nature is doing its own eliminating." By attempting to protect the species, the Service was only prolonging the inevitable.

Service Response: The Service is required to determine whether any species is endangered or threatened based on the applicability of the five factors listed under section 4(a)(1) of the Act, including "other natural or manmade factors affecting their continued existence." Competition from nonnative plants often results from, and is accelerated by, human activities such as disturbance of natural habitat and fragmentation of natural habitat. The Service does not consider competition from nonnative plants a natural process, and therefore such competition constitutes a threat under the Act.

Issue 11: The Service must comply with Executive Order No. 12630 and conduct a takings analysis for each species before reaching any final decisions.

Service Response: Executive Order 12630, Government Actions and Interference with Constitutionally Protected Property Rights, requires that a Takings Implications Assessment (TIA) be conducted in connection with final rulemakings that may affect the value or use of private property. The Attorney General has issued guidelines to the Department of the Interior (Department) regarding TIAs. The Attorney General's guidelines state that TIAs are to be prepared after, rather than before, an agency makes a restricted discretionary decision. The Act requires the Service to make listing determinations based solely upon the best scientific and commercial data available. Economic considerations may not be used in listing determinations. If the Service determines that the final rule for listing any of these species may affect the use or value of private property, a TIA will be prepared for the rule(s).

Issue 12: One commenter supported the listing of *Acanthomintha ilicifolia* and *Hemizonia conjugens* and suggested that the genetic differences among populations of patchily distributed edaphic specialists could affect preservation strategies and priorities.

Service Response: The Service agrees that genetic differences among patchily distributed populations are a relevant concern in designing conservation strategies. Determination of genetic differences and their effects on conservation strategies and priorities will be addressed in recovery plan development after the species are listed.

Peer Review

The Service routinely has solicited comments from parties interested in, and knowledgeable of, species which have been proposed for listing as threatened or endangered species. The July 1, 1994, Peer Review Policy (59 FR 34270) established the formal requirement that a minimum of three independent peer reviewers be solicited to review the Service's listing decisions. During the August 9, 1995, to October 9, 1995, comment period, the Service solicited the expert opinions of three biologists having recognized expertise in botany and/or conservation biology to review the proposed rule. The Service

received comments from two of the three reviewers within the comment period. Both concurred with the Service on factors relating to the taxonomy of the species and biological and ecological information (E. Bauder *in litt.* 1995, M. Doderer *in litt.* 1995).

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that *Monardella linooides* ssp. *viminea* should be classified as an endangered species, and *Acanthomintha ilicifolia*, *Dudleya stolonifera*, and *Hemizonia*

should be classified as threatened species. Procedures found in section 4 of the Act and regulations implementing the listing provisions of the Act (50 CFR part 424) were followed. A species may be determined to be endangered or threatened due to one or more of the five factors described in section 4(a)(1). The threats and their application to *Acanthomintha ilicifolia* A. Gray, (San Diego thornmint), *Dudleya stolonifera* Moran (Laguna Beach liveforever), *Hemizonia conjugens* D.D. Keck (Otay tarplant), and *Monardella linooides* A. Gray ssp. *viminea* (Greene) Abrams (willow monardella) are as follows and summarized in Table 1.

TABLE 1.—SUMMARY OF THREATS

	Trampling grazing	Alien plant species	Off-road vehicles (ORV)	Urbanization	Mining	Alteration of hydrology	Overutilization
<i>Acanthomintha ilicifolia</i>	X	X	X	X	X		
<i>Dudleya stolonifera</i>	X	X		X			X
<i>Hemizonia conjugens</i>	X	X	X	X			
<i>Monardella linooides</i> ssp. <i>viminea</i>	X	X	X	X	X	X	X

A. The Present or Threatened Destruction, Modification, or Curtailment of Their Habitat or Range

The rapid urbanization of coastal southern California imminently threatens the four species in this final determination. Many of the same factors threatening *Acanthomintha ilicifolia*, *Hemizonia conjugens*, and *Monardella linooides* ssp. *viminea* in the United States (urban and agricultural development) also threaten these species in Baja California, Mexico.

Of the 52 historically known populations of *Acanthomintha ilicifolia* in the United States, 20 have been extirpated by residential or commercial developments. In addition, ORV activity and trampling by cattle and humans have contributed to the decline of this species. For example, one population (Sabre Springs) in Poway has declined by about 60 percent as a result of these factors (Bauder, McMillan, and Kemp 1994, CNDDDB 1997). Five populations are currently directly threatened by development (OGDEN 1992b, OGDEN 1992d, Enviromine 1994, CNDDDB 1997). Although existing and proposed development largely avoids direct impacts, in many cases the development footprint is immediately adjacent or in proximity to *A. ilicifolia* populations (Michael Brandman Associates 1990, RECON 1991a, OGDEN 1992b, OGDEN 1992c, OGDEN 1992d, OGDEN 1995, Bauder, McMillan, and Kemp 1994, Sweetwater Environmental Biologists 1994, T. & B. Planning Consultants

1994, Shapouri and Associates 1995, City of San Diego 1995a, City of San Diego and U.S. Fish and Wildlife Service 1996a, 1996b, 1997; U.S. Fish and Wildlife Service, *in litt.* 1996). Consequently, habitat is degraded and risks from nonnative plant replacement, trampling, fragmentation, and isolation increase (See Factor E of the "Summary of Factors Affecting the Species" section of this rule). Sixty percent of all individuals are, or will be situated in proximity to development after implementation of currently approved or proposed development (Roberts 1997a).

Four occurrences of *Acanthomintha ilicifolia* are on lands managed by the City of San Diego (Mission Trails Park, Los Penasquitos Park, and Sycamore Canyon Park) (Bauder, McMillan, and Kemp 1994; CNDDDB 1997). Each of these four occurrences receives some level of protection by the City of San Diego, because *A. ilicifolia* is a "covered species" under the MSCP.

One population of *Acanthomintha ilicifolia* is on land managed by The Nature Conservancy (McGinty Mountain) and four populations occur on the Cleveland National Forest (Viejas Mountain and Poser Mountain). These populations, however, are vulnerable to habitat degradation resulting from illegal dumping, trampling, erosion and ORV activity (Bauder, McMillan, and Kemp 1994). Roads adjacent to populations in the vicinity of McGinty Mountain and Penasquitos Canyon

provide easy access for foot traffic and ORV use.

The status of *Acanthomintha ilicifolia* and its habitat in northwestern Baja California, Mexico, is not well-documented. The species is known to occur as far south as Las Escobas near San Quintin, Mexico, but its distribution in Mexico is spotty (Reid Moran, pers. comm. 1992). The San Diego Natural History Museum has herbarium specimens of *A. ilicifolia* from nine localities in Baja California, Mexico; however, little information is available on numbers of individuals or specific threats. One population near Tecate, Mexico is threatened by an adjacent clay mining operation (Tom Oberbauer, Senior Planner, San Diego County, pers. comm. 1992). This northern region represents one of the most severely impacted areas in Baja California, and many of the same factors (urban and agricultural development) that have affected the status of this species in the United States also threaten the species in Mexico.

Three of the 25 known historic locations of *Hemizonia conjugens* are considered to be extirpated (Hogan 1990, S. Morey *in litt.* 1994, CNDDDB 1997). In addition, about 70 percent of the potentially suitable habitat for this species has been cleared for agriculture and urbanization (City of San Diego and U.S. Fish and Wildlife Service 1997). About 40 percent of all remaining individuals will be eliminated by currently approved and proposed

development projects (Morey, *in litt.* 1994; OGDEN 1992a, OGDEN 1992c, San Diego Gas and Electric 1995, Tetra Tech 1996, CNDDDB 1997). These impacts have been considered by the Service through development of the MSCP. Of the remaining populations after implementation of these various developments, about 90 percent will be situated adjacent to, or within the immediate vicinity of, urban development and recreation areas (Roberts 1997b). These plants will be threatened by the secondary effects of encroaching development (e.g., nonnative plant species replacement, isolation, and fragmentation). Management provided through the MSCP and on San Diego National Wildlife Refuge lands, however, will help alleviate these effects for projects subject to the MSCP.

The four largest populations (Horseshoe Bend, Rice Canyon, Dennery Canyon, and Proctor Valley) of *Hemizonia conjugens* support 90 percent of all individuals. At Horseshoe Bend, the largest population (about 65 percent of all individuals) will be impacted by a residential-commercial development project (Rancho San Miguel), utilities, and State Route 125 (OGDEN 1992a, San Diego Gas and Electric 1995, Tetra Tech 1996). These impacts will result in loss of about 60 percent of the individuals and most of the occupied habitat in the Rancho San Miguel complex. The remaining portion of the Horseshoe Bend population, which constitutes about 35 percent of the known individuals of the species, will be conserved as part of the MSCP. Direct impacts to the Rice Canyon population (about 15 percent of all individuals) have been for the most part avoided. The remaining population, however, is isolated and in proximity to urban development. It is likely that this population will decline significantly in the foreseeable future (Morey, *in litt.* 1994; CNDDDB 1997, Roberts 1997b). A third major population is located in the vicinity of Dennery Canyon. The majority of this population will be conserved in open space (City of San Diego 1995b, City of San Diego and U.S. Fish and Wildlife Service 1996b). A significant portion of the potential habitat within the population, however, was impacted by grading in the spring of 1997 for a residential-commercial project (Cal Terraces) (U.S. Fish and Wildlife Service, *in litt.* 1997). This project resulted in preservation of 1.2 ha (3 ac) out of 7 ha (17.5 ac) of suitable habitat on the project site. The fourth largest population (Proctor Valley) is partially within an approved

development (OGDEN 1992c, City of San Diego and U.S. Fish and Wildlife Service 1996b, City of San Diego and U.S. Fish and Wildlife Service 1997).

Several populations of *Hemizonia conjugens* have also been affected by ORV activity on Otay Mesa. For example, about 12 ha (30 ac) of suitable and occupied habitat at Dennery Canyon have been severely impacted by ORV activities (B. McMillan, U.S. Fish and Wildlife Service, pers. comm. 1997). Implementation of the MSCP requires that these effects be alleviated.

Several other major populations of *Hemizonia conjugens* will be largely conserved (Wolf Canyon, Otay Valley, Old Salt Creek, Jamacha Hills); however, these populations will be adjacent to, or in proximity to recreation or future development (OGDEN 1992c, City of San Diego and U.S. Fish and Wildlife Service 1996b, Roberts 1997b). In addition, populations that are conserved through the development process may be affected by Federal and State activities not subject to the MSCP, including State transportation projects (California Department of Transportation), border fencing, ORV activity, and new facilities (Immigration and Naturalization Service), and airport expansion (Federal Aviation Administration). For example, one alternative for State Route 125 may affect as much as 23 ha (57 ac) of *H. conjugens* habitat. State Route 905 passes through suitable habitat and expansion of this highway will likely reduce the extent of this habitat. At least five populations of *H. conjugens* on Otay Mesa are at risk from United States Immigration and Naturalization Service Border Patrol (Border Patrol) activities due to the proximity of the U.S.-Mexican border. ORV activity relating to Border Patrol activities has impacted and potentially significantly reduced one major population (Spring Canyon) (B. McMillan, pers. comm. 1997). These activities also impact considerable suitable but currently unoccupied habitat on private land on Otay Mesa. Another population may be impacted by a proposed Border Patrol field station on Otay Mesa. To some degree those populations covered under the MSCP will still be subject to the effects of habitat fragmentation, ORV activity, and disturbance described previously in this rule.

Monardella linoides ssp. *viminea* was previously known from 27 occurrences in the United States, 7 of which have been extirpated by transportation projects and industrial development. Of the 5 remaining occurrences with at least 100 individuals, none are currently protected. The remaining populations of

M. linoides ssp. *viminea* are threatened by urban development, sand and gravel mining, ORV activity, trampling, trash dumping, and erosion. One of the largest populations (2,000 to 3,000 individuals) is located partially on private property, partially on Federal land managed by the Navy, and partially on city-owned property (Sycamore Canyon City Park). This population has been damaged by ORVs and fire, factors that also threaten the other remaining populations of this species. Two populations on Marine Corps Air Station, Miramar land have been partially destroyed by road construction. The other two large populations of *M. linoides* ssp. *viminea* are on private property. One of these (approximately 340 individuals) is threatened by sand and gravel mining. The other population, with approximately 200 individuals, is on property proposed for development. Habitat for this species in Los Penasquitos City Regional Park is degraded by stream erosion, trash dumping, and the invasion of nonnative species. Another population in San Clemente Park, owned by the City of San Diego, was reported to have approximately 60 plants in the early 1980's, but contained fewer than 35 plants in 1987 (CNDDDB 1997).

Approximately 8,000 to 10,000 individuals of *Dudleya stolonifera* are spread among 6 locations. Urban development and associated edge effects (see "Discussion of the Four Species" and Factor E of the "Summary of Factors Affecting the Species" sections of this rule) threaten several populations of *D. stolonifera*. Although the entire range of this species is within the boundaries of the Central/Coastal NCCP, three of the major populations representing 70 percent of the species are found on private lands managed by nonparticipating landowners. The population at the type locality (site of collection of the specimen used to describe the species) for *D. stolonifera* is directly adjacent to residential development in Aliso Canyon (Orange County) and is declining due to increased shading and competition from nonnative plants (F. Roberts, U.S. Fish and Wildlife Service, pers. obs.). This population is also threatened by fuel modification (Marsh 1992), which includes modifying existing habitat to reduce the immediate risk of fire (e.g., thinning vegetation, fire breaks, disking, and mowing).

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

All four species addressed in this rule may be threatened with vandalism and/or collection. Simply listing a plant species can precipitate commercial or scientific interest, both legal and illegal, which can threaten the species through unauthorized and uncontrolled collection for both commercial and scientific purposes. The listing of species as endangered or threatened publicizes their rarity and may make them more susceptible to collection by researchers or curiosity seekers (Mariah Steenson pers. comm. 1997, M. Bosch, U.S. Forest Service *in litt.* 1997). Plants are particularly vulnerable to vandalism, and rare or listed plants may be viewed as targets by vandals who view their presence as a threat to future land use. *Dudleya stolonifera* is known to be in cultivation, and is threatened by overcollection. All species of *Dudleya* are vulnerable to collection and *D. stolonifera* is listed as a CITES Appendix I species (Ayensu and DeFilipps 1978). Field-collected specimens of *D. stolonifera* have been found in southern California nurseries and are likely to be harvested for private collections (Kei Nakai, horticulturalist, *in litt.* 1978, and pers. comm. 1992). A Smithsonian report on endangered and threatened plants in the United States considers all species of *Dudleya* vulnerable to collection (Ayensu and DeFilipps 1978). *Monardella linooides* ssp. *viminea* is also known to be in cultivation, and the listing of this species could result in increased interest and possible illegal collection. Collection has not been documented for the other species in this rule.

C. Disease or Predation

Herbivory may threaten some populations of the plants contained in this rule. For example, failure of the *Acanthomintha ilicifolia* transplants at Quail Gardens was attributed primarily to rabbit predation (Don Miller, Quail Gardens, pers. comm. 1992). One population of *Dudleya stolonifera* appears to have increased in size significantly after cattle grazing was eliminated (U.S. Fish and Wildlife Service, unpubl. data, 1997). Threats from predation are not known to be a factor for *Hemizonia conjugens* and *Monardella linooides* ssp. *viminea*.

D. The Inadequacy of Existing Regulatory Mechanisms

Existing regulatory mechanisms that could provide some protection for these species include—(1) the Act in cases

where these species occur in habitat occupied by a listed species; (2) conservation provisions under the Federal Clean Water Act; (3) listing under the California Endangered Species Act (CESA); (4) the California Environmental Quality Act (CEQA); (5) implementation of conservation plans pursuant to the California NCCP program; (6) land acquisition and management by Federal, State, or local agencies or by private groups and organizations; (7) local laws and regulations; and (8) enforcement of Mexican laws.

Federal Endangered Species Act

The Act may already afford protection to sensitive species if they coexist with species already listed as threatened or endangered under the Act. A number of federally listed species occur within the range of the four plants discussed in this final rule. Protection afforded by these species, however, is minimal due to lack of overlapping habitat requirements.

The coastal California gnatcatcher is listed as a threatened species under the Act, and it occurs in some of the areas occupied by these four plant species. Significant populations of these plants, however, occur in riparian scrub, chaparral, or grassland areas and, therefore, do not benefit from conservation required for the California gnatcatcher. For example, the open space on one development was designed to conserve the majority of the California gnatcatchers within the project boundary; however, only 40 percent of the *Hemizonia conjugens* on the project site is conserved as a result of this design (Tetra Tech 1996, City of San Diego and U.S. Fish and Wildlife Service 1996b). In another example, the Service consulted with the U.S. Army Corps of Engineers (Corps) on the California gnatcatcher in regard to a development proposal in the City of Carlsbad. The consultation included a review of impacts to *Acanthomintha ilicifolia*. However, direct benefits to the species were minimal (U.S. Fish and Wildlife Service, *in litt.* February 22, 1996).

Several other listed species occur within the vicinity of the species listed here but are largely restricted to vernal pools (*Pogogyne abramsii* (San Diego mesa mint), *Pogogyne nudiuscula* (Otay mesa mint), Riverside fairy shrimp (*Streptocephalus wootoni*), San Diego fairy shrimp (*Branchinecta sandiegoensis*) and San Diego button-celery (*Eryngium aristulatum* var. *parishii*)); riparian habitats (arroyo toad (*Bufo microscaphus californicus*), California red-legged frog (*Rana aurora daytonii*), and least Bell's vireo (*Vireo*

bellii pusillus); sandy coastal terraces (Pacific pocket mouse (*Perognathus longimembris pacificus*)); or southern maritime chaparral (*Arctostaphylos glandulosa* ssp. *crassifolia*, *Baccharis vanessae*, *Chorizanthe orcuttiana*, and *Verbesina dissita* (big-leaved crown beard)). These habitats are generally not occupied by any of the species in this final rule. Only one out of six populations of *Dudleya stolonifera* occurs with *Verbesina dissita*.

Conservation Agreements

Conservation agreements with other Federal agencies may reduce the decline of some species so that listing as threatened or endangered is no longer necessary. Conservation agreements with other Federal agencies, however, would not appreciably benefit most of the species in this rule. One of the four species, *Dudleya stolonifera*, is not known to occur on Federal lands. Although *Hemizonia conjugens* is not currently known from Federal lands, there may be potential habitat for this species on Federal land on Otay Mesa. Several large populations of *Acanthomintha ilicifolia* occur on Federal lands; however, these populations account for only a small number of the existing populations (5 of 32 populations). While a conservation agreement with the Forest Service could provide for the long-term conservation of these few populations, it is unlikely that such an agreement would preclude the overall decline of the species.

About 20 percent of *Monardella linooides* ssp. *viminea* populations occur on private land. The distribution of this species, characterized by small populations, is extremely restricted. The majority of the individual plants in the United States occur on Federal lands. These lands are presently under control of the U.S. Marine Corps. At this time there are no conservation agreements for this species with the U.S. Marine Corps. The Service is currently reviewing the Draft Integrated Natural Resource Management Plan for the Marine Corps Air Station Miramar. No significant protection measures are outlined in the draft beyond periodic monitoring. It is not clear what, if any, specific protection measures will be adopted for this species in the final version of the plan.

Conservation Provisions Under the Clean Water Act

Monardella linooides ssp. *viminea* could potentially be affected by projects requiring a permit from the Corps under section 404 of the Clean Water Act. However, there are no specific provisions that adequately conserve rare

or candidate plant species. Although the other species listed in this rule are not within habitat subject to Corps jurisdiction, inclusion of these species in projects reviewed by the Corps may result in consultation with the Service through interrelated and interdependent effects. But this seldom results in significant conservation benefits to upland species, such as *Acanthomintha ilicifolia* (U.S. Fish and Wildlife Service, *in litt.* February 22, 1996).

State Laws and Regulation

Under provisions of the Native Plant Protection Act (chapter 10 section 1900 *et seq.* of the California Fish and Game Code) and CESA (chapter 1.5 section 2050 *et seq.* of the Fish and Game Code), the California Fish and Game Commission listed *Acanthomintha ilicifolia* (1982), *Hemizonia conjugens* (1979), and *Monardella linoidea* ssp. *viminea* (1979) as endangered (CDFG 1996). *Dudleya stolonifera* was listed as threatened by CDFG in 1987. Although both statutes prohibit the "take" of State-listed plants (chapter 10 section 1908 and chapter 1.5 section 2080), populations of three of the four species have continued to decline. For example, one project in San Diego, California, resulted in the elimination of a major population of *H. conjugens* (CDFG 1994, CNDDDB 1997) subsequent to the State listing of the species. Although conditions of the State consultation required that 5 ha (12 ac) of *H. conjugens* habitat be acquired to mitigate the loss of the population, this has not occurred.

California Senate Bill 879, passed in 1997 and effective January 1, 1998, requires individuals and entities to obtain 2081(b) incidental take permits to take listed species; however, the draft of proposed regulations to implement Senate Bill 879 would except the prohibition of take of listed plant species from major categories of activities, including take incidental to agricultural operations, approved timber harvest operations, mining assessment work, public works projects, and removal or destruction of plants from building sites on private lands. The extent to which the amended State Statute will afford protection to State-listed plant species is uncertain at this time.

Acanthomintha ilicifolia has benefitted from State listing. Since the species was listed in 1982, direct impacts to the species from development projects have been reduced. The configuration of remaining populations, however, is not conducive to long-term conservation; in many cases the development footprint is

immediately adjacent or in proximity to *A. ilicifolia* populations. Consequently, habitat is degraded and risks from nonnative plant replacement, trampling, fragmentation, and isolation increase (See Factor A of the "Summary of Factors Affecting the Species" section of this rule).

The majority of the known populations of *Acanthomintha ilicifolia*, *Dudleya stolonifera*, and *Hemizonia conjugens* occur on privately-owned land. Actions on private lands that may significantly affect biological resources, including the plants listed in this rule, require review under CEQA. The CEQA requires that significant biological impacts be addressed. Local lead agencies empowered to uphold and enforce the CEQA have made determinations that have affected, or will adversely affect, these species and their habitats.

The CEQA requires that a project proponent publicly disclose the potential environmental impacts of proposed projects. The public agency with the primary authority or jurisdiction over the project is designated as the lead agency and is responsible for conducting review of the project and consulting with other agencies concerned with resources affected by the project. Required biological surveys are sometimes inadequate and mitigation measures used to condition project approvals are sometimes experimental and do not always adequately guarantee protection of sustainable populations of the species considered in this rule. Section 15065 of the CEQA guidelines requires a finding of significance if a project has the potential to "reduce the number or restrict the range of a rare or endangered plant or animal." CEQA decisions are also subject to overriding social and economic considerations, which allows the CEQA lead agency to approve a project with significant adverse effects on a listed plant species where the agency concludes that overriding considerations justify approval of the project.

As a case in point, a CEQA document reporting biological surveys conducted on a large parcel east of Chula Vista indicated the approximate location of *Hemizonia conjugens* within the project site, but included no data on relative population size (OGDEN 1992b). Regarding a separate project near the Sweetwater Reservoir, the CEQA document disclosed that proposed development associated with a project would result in significant declines to the largest known population of *H. conjugens* and result in preservation of less than 30 percent of the individuals

within the project area (OGDEN 1992a, Tetra Tech, Inc. 1996). Later coordination with the State and Service increased preservation within the proposed project. In another example, a project on west Otay Mesa was proposed that effectively would have eliminated the majority of *H. conjugens* habitat within the project area (City of San Diego 1993). Nonetheless, statements of overriding considerations were developed, and these projects were approved.

Transplantation and relocation projects are frequently used to compensate for the loss of rare plant species under CEQA. Hall (1987) documents several attempts at transplanting *Acanthomintha ilicifolia*, *Hemizonia conjugens* and *Monardella linoidea* ssp. *viminea*. In one transplantation project for *A. ilicifolia*, maintenance and monitoring was scheduled for a period of 5 years. Subsequently, all records of the project were lost and the new property owner claimed no responsibility for the project. This site was destroyed by trash dumping and ORV use (Hall 1987). One year after 45 individuals of *M. linoidea* ssp. *viminea* were transplanted by the California Department of Transportation, only four had survived (Hall 1987, Kreager 1988). Of the 53 transplantation, relocation or reintroduction projects reviewed, only 15 percent were considered to be fully successful. None of these successful projects included *A. ilicifolia*, *H. conjugens*, or *M. linoidea* ssp. *viminea*. Transplantation has not yet been demonstrated to provide for the long-term viability of any of the four species listed in this rule.

Regional Planning Efforts

In 1991, the State of California established the NCCP program to address conservation needs of natural ecosystems throughout the State. The focus of the current planning program is the coastal sage scrub community in southern California, although other vegetation communities are being addressed in an ecosystem approach. *Acanthomintha ilicifolia*, *Dudleya stolonifera*, *Hemizonia conjugens*, and *Monardella linoidea* ssp. *viminea* are currently covered under the MSCP and the Central/Coastal Subregional NCCP/Habitat Conservation Plan (Central/Coastal NCCP) of Orange County, California, and are being considered for inclusion as covered species under the MHCP.

The Central/Coastal NCCP of Orange County was approved in July of 1996. Only one of the four species (*Dudleya stolonifera*) occurs within the Central/

Coastal NCCP. The entire range of this species lies within this subregion, and it is considered a "covered species," but only on lands owned or controlled by participating landowners. "Covered species" are those species that will be adequately conserved by a plan's proposed preservation and management to provide long-term preservation within a Habitat Conservation Planning Area or NCCP subregion. Three of the four major populations of *Dudleya stolonifera*, including about 70 percent of all individuals and one minor population, are situated on lands managed by nonparticipating landowners within the Central/Coastal NCCP and, therefore, are not under the jurisdiction of the plan.

Since the publication of the proposed rule, the MSCP regional planning effort in southwestern San Diego County, has been finalized and submitted to the Service as part of several applications for section 10(a)(1)(B) incidental take permits for 85 species, including *Acanthomintha ilicifolia*, *Hemizonia conjugens*, and *Monardella linooides* ssp. *viminea*. The Service and the City of San Diego have jointly prepared a Recirculated Environmental Impact Statement, Issuance of Take Authorizations for Threatened and Endangered Species due to urban Growth within the (MSCP) planning area. This document, released on August 30, 1996, and finalized in December 1996, assesses the effects of land-use decisions that will be made by local jurisdictions to implement the plan and the effects of issuing the incidental take permit for the 85 species. A permit was issued to the City of San Diego in July, 1997, and to the County of San Diego in March 1998. A decision on permit issuance is expected for Chula Vista within the next year. The MSCP sets aside preservation areas and provides for monitoring and management for the 85 covered species addressed in the permit application, including *Acanthomintha ilicifolia*, *Hemizonia conjugens*, and *Monardella linooides* ssp. *viminea*.

Four of the 11 major populations (3,000 plants or more) of *Acanthomintha ilicifolia* within the United States occur within the MSCP subregion (Roberts 1997a). The Service believes that three of these four populations will be conserved by the MSCP. This species is also included on the list of narrow endemics under the MSCP, which requires jurisdictions to specify and implement measures in their subarea plan to avoid or minimize impacts to all populations (including 3 additional major populations). Significant populations of *A. ilicifolia*,

however, are located outside the MSCP subregion, including four major populations that occur on lands managed by the Forest Service, and one additional major population that occurs east of the MSCP subregion. The MHCP planning area contains a single major population of *A. ilicifolia*. The MHCP, which will include the Carlsbad Habitat Management Plan (HMP) program, is still in the early developmental phase, and thus it is uncertain if and what level of protection will be provided for *A. ilicifolia*.

All of the United States populations of *Hemizonia conjugens* occur within the MSCP subregion. Nine of the 12 major populations, supporting about 35 percent of the individuals, will be adequately conserved by the MSCP. This species is on the MSCP list of narrow endemics, which requires jurisdictions to specify and implement measures in their subarea plan to avoid or minimize impacts. The MSCP also requires management of this species to address edge effects.

However, several other large populations, comprising about 80 percent of individuals, occur within the Chula Vista Subarea Planning Area of the MSCP. The Chula Vista Subarea Plan has not been submitted to the Service for approval. In addition, *Hemizonia conjugens* likely will continue to be subject to significant impacts from projects and activities not subject to the MSCP (e.g., Border Patrol activities, State and Federal transportation projects (e.g., State Route 125 and Interstate 905), Federal Aviation Administration projects, Department of Defense activities, utility lines, and pipelines).

Although about 95 percent of the United States range of *Monardella linooides* ssp. *viminea* occurs within the MSCP subregion, only about 20 percent occurs outside Marine Corps Air Station, Miramar. Therefore, the majority of the populations are not subject to MSCP jurisdiction. At least one additional small population occurs within the Poway Habitat Conservation Plan area. This species likely will continue to be subject to significant impacts from activities not subject to the MSCP (e.g., sand and gravel mining, State and Federal transportation projects, Department of Defense activities, pipelines and utility lines).

Land Acquisition and Management

Land acquisition and management by State or local agencies or by private groups and organizations have contributed to the protection of some localities containing the species included in this rule. These efforts, as

discussed below, are inadequate, however, to assure the long-term survival of these four species. Nine of the 32 populations of *Acanthomintha ilicifolia* are on public lands (Penasquitos Park and Mission Trails Regional Park) or on lands managed by the Forest Service, including six major populations; however, these populations account for only about 30 percent of the known individual plants. Populations on Federal land (Cleveland National Forest) have been negatively affected by grazing, and illegal dumping (Winter 1991, Bauder, McMillan, and Kemp 1994). Two of the six populations, including one major population, of *Dudleya stolonifera* are within preserves (Laguna Laurel Ecological Preserve and Irvine Coast Wilderness Regional Park). The three other major populations of this species are on private land. Several small populations of *Monardella linooides* ssp. *viminea* occur on Penasquitos Preserve; however, the majority of plants in this species occurs outside preserve lands. Nine major populations of *Hemizonia conjugens* will be conserved under the MSCP.

The four plant species also occur in "dedicated" open space frequently in association with development projects. These areas are often specifically set aside for conservation as required by local and County project approvals or the CEQA, and are managed by private organizations, individuals, corporations, or local jurisdictions. Open space dedications, however, do not necessarily incorporate the principles of conservation biology. As a result, many are poorly configured or too small to ensure long-term preservation of these species (see Factor E of the "Summary of Factors Affecting the Species" section of this rule). County open space designations within General Development Plans are subject to amendments and, therefore, cannot be considered as permanent conservation.

Local Laws, Regulations, and Ordinances

The four species in this rule have been identified as sensitive under various local laws, regulations, and ordinances. However, development projects continue to be approved and implemented with designs that do not preserve populations or habitat for the species listed in this rule, or that contribute to further isolation and fragmentation of populations.

Mexican Laws

The ranges of *Acanthomintha ilicifolia*, *Hemizonia conjugens*, and *Monardella linooides* ssp. *viminea* extend

into northern Baja California, Mexico. Mexico has laws that could provide protection to rare plants; however, enforcement of these laws is lacking (Joe Quiroz, The Nature Conservancy, Pers. Comm. 1991).

On July 29, 1983, *Dudleya stolonifera* was included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). CITES is a treaty established to prevent international trade that may be detrimental to the survival of plants and animals. Generally, both import and export permits are required from the importing and exporting countries before an Appendix I species may be shipped, and Appendix I species may not be exported for primarily commercial purposes. But plants that are certified by the Service as artificially propagated in accordance with CITES conference resolutions may be exported for commercial purposes with only CITES export documents from the exporting country. CITES permits may not be issued if the export will be detrimental to the survival of the species or if the specimens were not legally acquired. CITES does not regulate take or domestic trade.

E. Other Natural or Manmade Factors Affecting Their Continued Existence

Dudleya stolonifera and *Monardella linoidea* ssp. *viminea* are threatened with extinction by virtue of their small population sizes. Chance events, such as floods, fires, or drought, can substantially reduce or eliminate small populations and increase the likelihood of extinction. For example, in October 1993, a wildfire burned about 10,400 ha (26,000 ac) of the San Joaquin Hills in Orange County. Three of the six populations of *D. stolonifera* were within the burned area. The two smaller populations were significantly affected by the fire and potentially eliminated.

In addition, small populations are threatened by inbreeding depression. Small populations can have significantly lower germination rates than larger populations of the same species due to high levels of homozygosity (Menges 1990). Furthermore, *Acanthomintha ilicifolia* and *Hemizonia conjugens* are annuals that undergo large population fluctuations from year to year. Annuals may not have a persistent seed bank or may be unable to recolonize areas of suitable habitat due to dispersal barriers such as intervening development. These populations are particularly vulnerable to local extirpations.

The San Diego Water Authority periodically discharges as much as 3 million gallons of water into dry water

courses that support *Monardella linoidea* ssp. *viminea* on Marine Corps Air Station, Miramar lands (Susan Wynn, U.S. Fish and Wildlife Service, pers. comm. 1997). Water discharge outside the rainy season would affect this species by disrupting dispersal and by possibly eliminating mature plants. Although recent coordination between the Water Authority and the Navy has reduced the likelihood of these events, the threat remains.

Nonnative grass and forb species have invaded many of southern California's plant communities. Their presence and abundance is generally an indirect result of habitat disturbance by development, mining, grazing, disking, and alteration of hydrology. The invasion of both native and nonnative wetland plant species as a result of altered drainage patterns threatens habitat for *Monardella linoidea* ssp. *viminea* (Scheid 1985).

The effects of competition with nonnative species is most problematic immediately adjacent to urban areas and in habitat isolated or fragmented by development (Alberts *et al.*, 1991).

Acanthomintha ilicifolia is particularly sensitive to nonnative competition, and this factor has contributed to significant decline in many populations of this species (Bauder, McMillan, and Kemp 1994). Although more tolerant of nonnative competition, *Hemizonia conjugens* populations are also depressed by presence of dense populations of nonnative species (S. Morey, *in litt.* 1994, CNDDDB 1997). Grazing negatively affects *A. ilicifolia* by increasing erosion, contributing to soil compaction, and introducing a variety of nonnative grasses that exclude *A. ilicifolia* from areas of otherwise suitable habitat (Winter 1991). Several populations of *Dudleya stolonifera* are threatened by trampling and the invasion of nonnative plant species (Marsh 1992).

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by these four species in determining to make this rule final. Much of the remaining habitat for these species is degraded. Based on this evaluation, the Service determines *Monardella linoidea* ssp. *viminea* to be in danger of extinction throughout all or a significant portion of its range. This species persists in small, isolated populations surrounded by urban or agricultural development. This species is in danger of extinction throughout all or a portion of its range due to habitat alteration and destruction resulting from urban, recreational, and agricultural

development; fuel modification; trampling from recreational activities; inadequacy of regulatory mechanisms; and competition from exotic plant species. Additionally, although populations of this species occur within the MSCP subregion of San Diego County, California, the majority of *M. linoidea* ssp. *viminea* populations occur on Marine Corps Air Station, Miramar lands that are not subject to the MSCP.

For reasons discussed below, the Service finds that *Dudleya stolonifera*, *Hemizonia conjugens*, and *Acanthomintha ilicifolia* are likely to become endangered within the foreseeable future throughout all or a significant portion of their ranges. *Dudleya stolonifera* and *H. conjugens* for the most part persist as small, isolated populations surrounded by urban or agricultural development.

Dudleya stolonifera is at risk as a result of urban proximity, recreational activities, potential overcollection, and exotic competition. Because of the limited number and area of the populations, *D. stolonifera* is also at risk from fire and fire management related activities. Although the entire range of *D. stolonifera* is within the Central/Coastal NCCP subregion, most of the populations are not within the preserve area. Preserve design, however, will reduce the likelihood that significant habitat altering projects will be proposed that substantially impact these populations. The species also is situated in rugged terrain which offers some protection from urbanization.

The range of *Hemizonia conjugens* is restricted to a single planning subregion (MSCP) in the United States. Although the species continues to be threatened by approved and proposed urban development, ORV, and trampling, about 65 percent of the major populations will be preserved through the MSCP. The Service has determined that the protection afforded from MSCP preservation has reduced the likelihood of extinction of this species in the foreseeable future. However, the species is significantly threatened by activities that are not subject to MSCP jurisdiction (e.g., State Route 125, Immigration and Naturalization Service (INS) activities). Therefore, the Service has determined that threatened is the appropriate designation for this species.

Acanthomintha ilicifolia populations are threatened by habitat degradation and impacts from trampling, ORV activity, nonnative plants, fragmentation, and isolation either directly or indirectly due to the proximity to development of protected areas. Although the number of populations of *A. ilicifolia* has declined,

about 65 percent of the remaining major populations occur within the MSCP subregion, and six of these populations will be conserved by the MSCP. An additional major population may be protected by the MHCP, and four major populations are on lands managed by the Forest Service. Therefore, the Service has determined that threatened is the appropriate designation for this species.

Critical Habitat

Critical habitat is defined in section 3 of the Act as the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features essential to the conservation of the species and that may require special management considerations or protection; and specific areas outside the geographical area occupied by the species at the time it is listed, upon determination that such areas are essential for the conservation of the species. "Conservation" means the use of all methods and procedures needed to bring the species to the point at which listing under the Act is no longer necessary.

Section 4(a)(3) of the Act, as amended, and the Service's implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time a species is listed as endangered or threatened. Service regulations (50 CFR 424.12(a)(1)) state that designation of critical habitat is not prudent when (1) the species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species, and/or (2) such designation of critical habitat would not be beneficial to the species.

Section 7(a)(2) of the Act requires Federal agencies to consult with the Service to ensure that any action authorized, funded, or carried out by such agency, does not jeopardize the continued existence of a federally listed species or does not destroy or adversely modify designated critical habitat. The requirement that Federal agencies refrain from contributing to the destruction or adverse modification of critical habitat in any action authorized, funded or carried out by such agency (agency action) is in addition to the section 7 prohibition against jeopardizing the continued existence of a listed species; and it is the only mandatory legal consequence of a critical habitat designation. The Service's implementing regulations (50

CFR part 402) define "jeopardize the continuing existence of" and "destruction or adverse modification of" in very similar terms. To jeopardize the continuing existence of a species means to engage in an action "that reasonably would be expected to reduce appreciably the likelihood of both the survival and recovery of a listed species." Destruction or adverse modification of habitat means an "alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." Common to both definitions is an appreciable detrimental effect to both the survival and recovery of a listed species. An action that appreciably diminishes habitat for recovery and survival may also jeopardize the continued existence of the species by reducing reproduction, numbers, or distribution because negative impacts to such habitat may reduce population numbers, decrease reproductive success, or alter species distribution through habitat fragmentation.

For a listed plant species, an analysis to determine jeopardy under section 7(a)(2) would consider loss of the species associated with habitat impacts. Such an analysis would closely parallel an analysis of habitat impacts conducted to determine adverse modification of critical habitat. As a result, an action that results in adverse modification also would almost certainly jeopardize the continued existence of the species concerned. Because habitat degradation and destruction is the primary threat to these species, listing them will ensure that section 7 consultation occurs, and potential impacts to the species and their habitat are considered, for any Federal action that may affect these species. In many cases, listing also ensures that Federal agencies consult with the Service even when Federal actions may affect unoccupied suitable habitat where such habitat is essential to the survival and recovery of the species. This is especially important for plant species where consideration must be given to the seed bank component of the species, and associated pollinators and dispersal agents, which are not necessarily visible in the habitat throughout the year. In practice, the Service consults with Federal agencies proposing projects in areas where there is potentially suitable but unoccupied habitat, particularly when the species was known to recently occur there or in

similar nearby areas, or the area is known to harbor seed banks.

Apart from section 7, the Act provides no additional protection to lands designated as critical habitat. Designating critical habitat does not create a management plan for the areas where the listed species occurs; does not establish numerical population goals or prescribe specific management actions (inside or outside of critical habitat); and does not have a direct effect on areas not designated as critical habitat.

Critical habitat would provide no benefit to the species addressed in this rule on non-Federal lands (i.e., private, State, County or City lands) beyond that provided by listing. Critical habitat provides protection on non-Federal lands only if there is Federal involvement (a Federal nexus) through authorization or funding of, or participation, in a project or activity on non-Federal lands. In other words, designation of critical habitat on non-Federal lands does not compel or require the private or other non-Federal landowner to undertake active management for the species or to modify any activities in the absence of a Federal nexus. Possible Federal agency involvement or funding that could involve the species addressed in the rule on non-Federal lands include the Corps through section 404 of the Clean Water Act, the Federal Department of Housing and Urban Development, Federal Aviation Administration, the INS, and the Federal Highway Administration. Federal involvement, if it does occur, will be addressed regardless of whether critical habitat is designated because interagency coordination requirements such as the Fish and Wildlife Coordination Act (FWCA) and section 7 of the Act are already in place. When a plant species is listed, activities occurring on all lands subject to Federal jurisdiction that may adversely affect the species would prompt the requirement for consultation under section 7(a)(2) of the Act, regardless of whether critical habitat has been designated.

While a designation of critical habitat on private lands would only affect actions where a Federal nexus is present and would not confer any additional benefit beyond that already provided by section 7 consultation because virtually any action that would result in an adverse modification determination would also likely jeopardize the species, a designation of critical habitat on private lands could result in a detriment to the species. This is because the limited effect of a critical habitat designation on private lands is often

misunderstood by private landowners whose property boundaries could be included within a general description of critical habitat for a specific species. Landowners may mistakenly believe that critical habitat designation will be an obstacle to development and impose restrictions on their use of their property. Unfortunately, inaccurate and misleading statements reported through widely popular medium available worldwide, are the types of misinformation that can and have led private landowners to believe that critical habitat designations prohibit them from making use of their private land when, in fact, they face potential constraints only if they need a Federal permit or receive Federal funding to conduct specific activities on their lands. These types of misunderstandings, and the fear and mistrust they create among potentially affected landowners, make it very difficult for the Service to cultivate meaningful working relationships with such landowners and to encourage voluntary participation in species conservation and recovery activities. Without the participation of landowners in the recovery process, the Service will find it very difficult to recover species that occur on non-Federal lands.

A designation of critical habitat on private lands could actually encourage habitat destruction by private landowners to rid themselves of the perceived endangered species problem. Listed plants have limited protection under the Act, particularly on private lands. Section 9(a)(2) of the Act, implemented by regulations at 50 CFR section 17.61 (endangered plants) and 50 CFR 17.71 (threatened plants) prohibits (1) removal and reduction of listed plant species to possession from areas under Federal jurisdiction, or their malicious damage or destruction on areas under Federal jurisdiction; or (2) removal, cutting, digging up, or damaging, or destroying any such species in knowing violation of any State law or regulation including State criminal trespass laws. Generally, on private lands, collection of, or vandalism to, listed plants must occur in violation of State law to be a violation of section 9 of the Act. The Service is not aware of any State law in California that generally regulates or prohibits the destruction or removal of federally listed plants on private lands (see section 9 discussion under "Available Conservation Measures" section of this rule). Thus, a private landowner concerned about perceived land management conflicts resulting from a critical habitat designation covering his

property would likely face no legal consequences if the landowner removed the listed species or destroyed its habitat. For example, in the spring of 1998, a Los Angeles area developer buried one of the only three populations of the endangered *Astragalus brautonii* in defiance of efforts under the CEQA to negotiate mitigation for the species (T. Thomas, U.S. Fish and Wildlife Service). The designation of critical habitat involves the publication of habitat descriptions and mapped locations of the species in the **Federal Register**, increasing the likelihood of potential search and removal activities at specific sites.

The Service acknowledges that in some situations critical habitat designation may provide some value to the species by notifying the public about areas important for the species conservation and calling attention to those areas in special need of protection. However, when this limited benefit is weighed against the detriment to plant species associated with the widespread misunderstanding about the effects of such designation on private landowners and the environment of mistrust and fear that such misunderstanding can create, the Service concludes that the detriment to the species from a critical habitat designation covering non-Federal lands outweighs the educational benefit of such designation and that such designation is, therefore, not prudent. The information and education process can more effectively be handled by working directly with landowners and communities during the recovery planning process and by the section 7 consultation and coordination where the Federal nexus exists. The use of these existing processes will impart the same knowledge to the landowners that critical habitat designation would, but without the confusion and misunderstandings that may accompany a critical habitat designation.

For similar reasons, the Service also concludes that there would be no additional benefits to the species covered in this rule beyond the benefits conferred by listing from a designation of critical habitat on Federal lands. In the case of each of these plant species, the existing occurrences of the species are known by the DOD and the U.S. Forest Service and any action that would result in adverse modification would almost certainly result in likely jeopardy to the species, so that a designation of critical habitat on Federal lands would not confer any additional benefit on the species. On the other hand, particularly on National Forest System lands, a designation of critical

habitat could increase the threats to these species from vandalism and collection similar to the threats identified in response to listing a species (Oberbauer 1992, Beauchamp *in litt.* 1997). Simply listing a species can precipitate commercial or scientific interest, both legal and illegal, which can threaten the species through unauthorized and uncontrolled collection for both commercial and scientific purposes. The listing of species as endangered or threatened publicizes their rarity and may make them more susceptible to collection by researchers or curiosity seekers (Mariah Steenson pers. comm. 1997, M. Bosch, U.S. Forest Service *in litt.* 1997). For example, the Service designated critical habitat for the mountain golden heather (*Hudsonia montana*), a small shrub not previously known to be commercially valuable or particularly susceptible to collection or vandalism. After the critical habitat designation was published in the **Federal Register**, unknown persons visited a Forest Service wilderness area in North Carolina where the plants occurred and, with a recently published newspaper article and maps of the plant's critical habitat designation in hand, asked about the location of the plants. Several plants the Service had been monitoring were later found to be missing from unmarked Service study plots. (Nora Murdock, U.S. Fish and Wildlife Service, pers. comm. 1998).

The Service has weighed the lack of overall benefits of critical habitat designation beyond that provided by listing as threatened or endangered, along with the benefits of public notification against the detrimental effects of the negative public response and misunderstanding of what critical habitat designation means and the increased threats of illegal collection and vandalism, and has concluded that critical habitat designation is not prudent for *Acanthomintha ilicifolia* (San Diego thornmint), *Monardella linoidea* ssp. *viminea* (willow monardella), *Hemizonia conjugens* (Otay tarplant), and *Dudleya stolonifera* (Laguna Beach liveforever). The specific reasons why designation of critical habitat is not prudent for each of these species are addressed in the following discussion.

Dudleya stolonifera

Dudleya stolonifera occurs within the Central/Coastal NCCP. However, only one of the six known populations and one minor population are considered to be adequately conserved on lands designated as a preserve. Three of the four major *Dudleya stolonifera*

populations, representing approximately 70 percent of the known individuals, occur on private lands whose owners are not participating in the Central/Coastal NCCP process. Federal involvement on these lands is unlikely because they do not involve wetland areas or any other activity associated with Federal agencies. If, in the future, there is Federal involvement through permitting or funding, such as through the Federal Highway Administration, then interagency coordination and consultation required by section 7 would be in effect if such actions may affect this species, once listed. As previously discussed, an analysis to determine jeopardy under section 7(a)(2) would consider loss of individual plants associated with habitat impacts. Such an analysis would closely parallel any analysis of habitat impacts conducted to determine adverse modification of critical habitat. A jeopardy finding would be equivalent to a finding of adverse modification of critical habitat. Therefore, there would be no additional conservation benefit to the species from designation of critical habitat beyond that provided by the species' listing.

All species of *Dudleya* are vulnerable to collection (Ayensu and DeFilippis 1978). *D. stolonifera* is listed as a CITES Appendix I species (see discussion under Factor D). Simply listing this species under the Act would publicize the rarity of the plants and could make them attractive to researchers, curiosity seekers or collectors of rare plants. Field collected specimens have been reported in nursery trade (Kei Nakai *in litt.* and discussion under Factor B of the "Summary of Factors Affecting the Species" section of this rule), most likely because of its attractiveness and accessibility, as well as taxonomic interest; Publication of precise maps and descriptions of critical habitat would likely increase the degree of threat to this species from collection or vandalism and habitat degradation associated with such collection and vandalism, and would likely contribute to its decline.

Therefore, the Service finds that critical habitat is not prudent for *Dudleya stolonifera* at this time because such designation would increase the risk of illegal collection and may increase the risk of vandalism. Furthermore, the Service believes that no benefit over that provided by listing would result from identification of critical habitat on the non-Federal lands where this species occurs, and designation would likely be detrimental for the reasons discussed above. The identification of critical habitat would

not increase management or conservation efforts on State or private lands and could impair those efforts. The Service believes that conservation of this species on private lands can best be addressed by working directly with landowners and communities during the recovery planning process and through the interagency coordination and consultation processes of section 7 should there be any future unforeseen Federal involvement.

Acanthomintha ilicifolia

Acanthomintha ilicifolia occurs on Federal and private lands, both inside and outside areas covered by the MSCP. Four of the eleven major populations are on Federal (Forest Service) lands. The Forest Service is aware of the occurrences and habitat of the species on their lands. The Cleveland National Forest consults with the Service under section 7 for activities related to other listed species in the area and would be subject to similar requirements as a result of this listing. Designation of critical habitat would not necessarily require the Forest to increase or change their commitment or management efforts for this species, only to avoid adverse modification of such critical habitat.

Four populations are on private lands within the MSCP planning subregion, and landowners and regional governments are aware of these occurrences. Three of these populations are considered adequately conserved; the fourth of these may be protected by the MHCP in the future. The remaining major populations are on private lands outside of the MSCP planning area where no Federal involvement is anticipated. If, in the future, there is Federal involvement through permitting or funding, such as through the Federal Highway Administration, section 7 consultation would be required if such action may affect the species, once listed. As previously discussed, an analysis to determine jeopardy under section 7(a)(2) would consider loss associated with habitat impacts. Such an analysis would closely parallel any analysis of habitat impacts conducted to determine adverse modification of critical habitat and would result in identical section 7 findings. A jeopardy finding would be equivalent to a finding of adverse modification of critical habitat.

The Service finds that critical habitat is not prudent for *Acanthomintha ilicifolia* at this time because such designation would provide no benefit over that provided by listing on privately owned lands where this species occurs. Landowners where the

species occur are aware of its presence and status. Critical habitat designation on these private lands would not change the way those lands are managed or require specific management actions to take place, and could be detrimental because of potential landowner misunderstandings about the real effects of critical habitat designation on private lands. The species is currently known and managed on Federal lands; no change in management would occur as a result of critical habitat designation and all activities that may affect the species on these Federal lands would be subject to section 7 consultation. The Service believes that the conservation of this species on private lands can best be addressed by working directly with landowners and communities during the recovery planning process and through the interagency coordination and consultation processes of section 7 for those activities with Federal agency involvement.

Hemizonia conjugens

Hemizonia conjugens occurs on private lands, all of which are situated within the MSCP subregion. If there is future Federal involvement such as through actions funded, permitted or conducted by the Federal Highway Administration, Federal Aviation Administration, or Border Patrol activities, then section 7 consultation would be required if the activities may affect the species, once listed. As previously discussed, an analysis to determine jeopardy under section 7(a)(2) would consider loss associated with habitat impacts. Such an analysis would closely parallel any analysis of habitat impacts conducted to determine adverse modification of critical habitat and result in identical section 7 findings. A jeopardy finding would be equivalent to a finding of adverse modification of critical habitat.

Private lands support all known populations of *Hemizonia conjugens* in the United States. Nine major populations, which support about 35 percent of the individuals, will be adequately conserved by the MSCP. The Service is unable to state at this time if the three remaining major populations will be adequately conserved under MSCP, because the subarea plan for the area containing the largest population (Chula Vista) has not yet been approved by the Service.

The Service has determined that the protection provided by MSCP preservation has reduced the likelihood of extinction of this species in the foreseeable future. But the species is threatened by activities not subject to MSCP jurisdiction, such as State

transportation projects (California Department of Transportation), border fencing, ORV activity, new facilities (Immigration and Naturalization Service), and airport expansion (Federal Aviation Administration). Any of these effects associated with a Federal nexus will be subject to section 7 consultation, as previously discussed. All existing sites are either currently known by the landowners, or the appropriate landowners will be notified prior to publication of this rule. The Service believes that the conservation of this species on private lands can best be addressed by working directly with landowners and communities during the recovery planning process, and through the interagency coordination and consultation processes of section 7 for those activities with Federal agency involvement. Therefore, the Service finds that critical habitat is not prudent for *Hemizonia conjugens* at this time because such designation would not be of benefit to the species. The Service believes that no benefit over that provided by listing would result from identification of critical habitat on privately owned land where this species occurs, and it could be detrimental because of potential landowner misunderstandings about the real effects of critical habitat designation on private lands.

Monardella linoides ssp. *viminea*

The entire U.S. distribution of *Monardella linoides* ssp. *viminea* occurs within the MSCP subregion. However, nearly 80 percent of the populations of *M. linoides* ssp. *viminea* are found on Marine Corp Air Station, Miramar lands that are not under jurisdiction of the MSCP. One of the largest populations (2,000 to 3,000 individuals) is located partially on private property, partially on Federal land managed by the Navy, and partially on City-owned property (Sycamore Canyon City Park). The DOD is aware of the species' presence, consults with the Service under section 7 for activities related to other listed species in the area and would be subject to these same requirements when this species is listed. Likewise, because of this plant's riparian habitat, the Corps is aware of the occurrences and habitat of this plant and the requirement for consultation under section 7 of the Act prior to issuance of permits under section 404 of the Clean Water Act. Designation of critical habitat would not increase the commitment of management efforts of the DOD or the Corps. At this time there are no conservation agreements for this species; however, the Service is currently reviewing the Draft Integrated

Natural Resource Management Plan for the Marine Corps Air Station, Miramar. Although the draft does not provide specific protection measures, it does include periodic monitoring, and with input from the Service, more specific conservation measures may be added into the final version of the plan.

The Service has determined that the populations of *Monardella linoides* ssp. *viminea* covered by the MSCP will be adequately protected by the participating jurisdictions and landowners. This species likely will continue to be impacted by activities not subject to the MSCP, but those activities are potentially subject to section 7 consultation (e.g., sand and gravel mining, State and Federal transportation projects, Department of Defense activities, pipelines and utility lines). On non-Federal lands, where about 20 percent of the populations of *Monardella linoides* ssp. *viminea* exist, critical habitat would provide no additional benefits above that provided by listing because it would not require any special management actions, and there is not likely to be any future Federal involvement. The existing sites are either currently known by the landowners, or the affected landowners will be notified prior to publication of this rule. On Federal lands, and on non-Federal lands where a Federal nexus exists, section 7 consultation would be required for any action that may affect the species, once listed. As previously discussed, an analysis to determine jeopardy under section 7(a)(2) would consider loss associated with habitat impacts. Such an analysis would closely parallel any analysis of habitat impacts conducted to determine adverse modification of critical habitat and result in identical section 7 findings. A jeopardy finding would be equivalent to a finding of adverse modification of critical habitat.

Monardella linoides ssp. *viminea* is found in cultivation, and the listing of this species could result in increased interest and illegal collection. Listing of plant species can generate publicity, which may precipitate commercial and scientific interest in the species (M. Steenson pers. comm. 1997, M. Bosch *in litt.* 1997). This interest can threaten the species through illegal collection and by excessive trampling of plants by individuals interested in seeing rare plants. Publication of precise maps and descriptions of critical habitat would increase the degree of threat to this species from collection or vandalism and could contribute to its decline (see Factor B of the "Summary of Factors Affecting the Species" section of this

final rule for additional discussion of collection threats).

Therefore, the Service finds that critical habitat is not prudent for *Monardella linoides* ssp. *viminea* at this time because such designation would not be of benefit to the species, and could increase the threat of illegal collection. The Service believes that no benefit over that provided by listing would result from identification of critical habitat on privately owned land where this species occurs. The Service believes that the conservation of this species can best be addressed by working directly with landowners and communities during the recovery planning process, and through the interagency coordination and consultation processes of section 7 for those activities with Federal agency involvement.

Given all of the above considerations, the Service finds that designation of critical habitat for *Dudleya stolonifera*, *Acanthomintha ilicifolia*, *Hemizonia conjugens*, and *Monardella linoides* ssp. *viminea* is not prudent at this time.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain activities. Recognition through listing results in public awareness and conservation actions by Federal, State, local, and private agencies, groups, and individuals. The Act provides for possible land acquisition from willing sellers and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against certain activities involving listed plants are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the

continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service. Section 7(a)(1) requires Federal agencies to use their authorities to conserve listed species.

Federal agencies expected to have involvement with *Monardella linoidea* ssp. *viminea* include the Army Corps of Engineers and the Environmental Protection Agency due to their permit authority under section 404 of the Clean Water Act. Because *M. linoidea* ssp. *viminea* occurs on Marine Corps Air Station, Miramar, the Marine Corps will likely be involved through military activities or potential transfer of excess Federal lands. The Forest Service has jurisdiction over several populations of *Acanthomintha ilicifolia*, *Monardella linoidea* ssp. *viminea* and *Hemizonia conjugens* may be affected by projects funded in whole, or in part, by the Federal Highway Administration. Additionally, *H. conjugens* is expected to be affected by INS projects and Federal Aviation Agency projects on Otay Mesa.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to all endangered or threatened plants. All prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61 (endangered plants) and 17.71 (threatened plants), apply. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to import or export, transport in interstate or foreign commerce in the course of a commercial activity, sell or offer for sale in interstate or foreign commerce, or remove and reduce the species to possession from areas under Federal jurisdiction. In addition, for plants listed as endangered, the Act prohibits the malicious damage or destruction on areas under Federal jurisdiction and the removal, cutting, digging up, or damaging or destroying of such plants in knowing violation of any State law or regulation, including State criminal trespass law. Section 4(d) of the Act allows for the protections provided for endangered species to be extended to threatened species through regulation, and 50 CFR 17.71 extends prohibitions for endangered plants, with one exception, to plants listed as threatened. Seeds from cultivated specimens of threatened plant species are exempt from these prohibitions provided that their containers are marked "Of Cultivated Origin." Certain exceptions

to the prohibitions apply to agents of the Service and State conservation agencies.

The Act and 50 CFR 17.62, 17.63, and 17.72 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered or threatened plants under certain circumstances. Such permits are available for scientific purposes, economic hardship purposes, and to enhance the propagation or survival of the species. For threatened plants, permits are also available for botanical or horticultural exhibition, educational purposes, economic hardships, or special purposes consistent with the purpose of the Act.

It is the policy of the Service, published in the **Federal Register** on July 1, 1994 (59 FR 34272), to increase public understanding of the prohibited acts that will apply under section 9 of the Act. Two of the four species in this rule are known to occur on lands under the jurisdiction of the Forest Service or the DOD (Marine Corps). Collection of listed plants or activities that would damage or destroy listed plants on these lands is prohibited without a Federal endangered species permit. Such activities on non-Federal lands would constitute a violation of section 9 of the Act if activities were conducted in knowing violation of California State law or regulation, or in violation of California State criminal trespass law.

The Service believes that, based upon the best available information, the following actions will not result in a violation of section 9, provided these activities are carried out in accordance with existing regulations and permit requirements:

(1) Activities authorized, funded, or carried out by Federal agencies (e.g., grazing management, agricultural conversions, wetland and riparian habitat modification, flood and erosion control, residential development, recreational trail development, road construction, hazardous material containment and cleanup activities, prescribed burns, pesticide/herbicide application, pipelines or utility lines crossing suitable habitat.) when such activity is conducted in accordance with any reasonable and prudent measures given by the Service in a consultation conducted under section 7 of the Act;

(2) Casual, dispersed human activities on foot or horseback (e.g., bird watching, sightseeing, photography, camping, hiking);

(3) Activities on private lands that do not require Federal authorization and do not involve Federal funding, such as grazing management, agricultural conversions, flood and erosion control, residential development, road construction, and pesticide/herbicide application when consistent with label restrictions;

(4) Residential landscape maintenance, including the clearing of vegetation around one's personal residence as a fire break.

The Service believes that the following might potentially result in a violation of section 9; however, possible violations are not limited to these actions alone:

(1) Unauthorized collecting of the species on Federal lands;

(2) Application of pesticides/herbicides in violation of label restrictions;

(3) Interstate or foreign commerce and import/export without previously obtaining an appropriate permit. Permits to conduct activities are available for purposes of scientific research and enhancement of the propagation or survival of the species.

The Act and 50 CFR 17.62 and 17.63 for endangered plants and 17.72 for threatened plants provide for the issuance of permits to carry out otherwise prohibited activities involving endangered and threatened plants under certain circumstances. Such permits are available for scientific purposes and to enhance the propagation or survival of the species. For threatened plants, permits are also available for botanical or horticultural exhibition, educational purposes, or special purposes consistent with the purposes of the Act.

Questions regarding whether specific activities would constitute violations of section 9 should be directed to the Field Supervisor of the Service's Carlsbad Field Office (see **ADDRESSES** section). Requests for copies of the regulations concerning listed plants (50 CFR 17.61 and 17.71) and general inquiries regarding prohibitions and permits may be addressed to the U.S. Fish and Wildlife Service, Ecological Services, Endangered Species Permits, 911 N.E. 11th Avenue, Portland, Oregon, 97232-4181 (telephone 503/231-2063; facsimile 503/231-6243).

National Environmental Policy Act

The Fish and Wildlife Service has determined that Environmental Assessments and Environmental Impact Statements, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

Paperwork Reduction Act

This rule does not contain any information collection requirements for which the Office of Management and Budget (OMB) approval under the

Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* is required. An information collection related to the rule pertaining to permits for endangered and threatened species has OMB approval and is assigned clearance number 1018-0094. This rule does not alter that information collection requirement. For additional information concerning permits and associated requirements for threatened species, see 50 CFR 17.32.

References

A complete list of all references cited in this final rule is available upon request from the Carlsbad Field Office (see ADDRESSES section).

Author: The primary authors of this final rule are Fred M. Roberts, Jr. and Gary D. Wallace, Ph.D. (see ADDRESSES section; telephone 760/431-9440).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Regulation Promulgation

Accordingly, amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1544; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500; unless otherwise noted.

2. Section 17.12(h) is amended by adding the following, in alphabetical order under FLOWERING PLANTS, to the List of Endangered and Threatened Plants, to read as follows:

§ 17.12 Endangered and threatened plants.

* * * * *
(h) * * *

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
FLOWERING PLANTS:							
* <i>Acanthomintha ilicifolia</i>	* San Diego thornmint.	* U.S.A. (CA) Mexico.	* Lamiaceae	* T	* 649	* NA	* NA
* <i>Dudleya stolonifera</i>	* Laguna Beach liveforever.	* U.S.A. (CA)	* Crassulaceae	* T	* 649	* NA	* NA
* <i>Hemizonia conjugens</i>	* Otay tarplant	* U.S.A. (CA) Mexico.	* Asteraceae	* T	* 649	* NA	* NA
* <i>Monardella linoides</i> ssp. <i>viminea</i>	* Willowy monardella	* U.S.A. (CA) Mexico.	* Lamiaceae	* E	* 649	* NA	* NA
*	*	*	*	*	*	*	*

Dated: September 29, 1998.
Jamie Rappaport Clark,
Director, Fish and Wildlife Service.
[FR Doc. 98-26858 Filed 10-9-98; 8:45 am]
BILLING CODE 4310-55-P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AD60

Endangered and Threatened Wildlife and Plants; Endangered or Threatened Status for Three Plants from the Chaparral and Scrub of Southwestern California

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) determines endangered status pursuant to the Endangered Species Act of 1973, as

amended (Act), for two plants, *Berberis nevinii* (Nevin's barberry) and *Fremontodendron mexicanum* (Mexican flannelbush) and threatened status for one plant, *Ceanothus ophiochilus* (Vail Lake ceanothus) throughout their respective historic ranges in southwestern California and northwestern Estado de Baja California, Mexico. These species are associated with scrub and chaparral plant communities and are, in some cases, endemic to specific types of clay soils.

These species are threatened by one or more of the following factors: destruction, degradation and fragmentation of habitat by urbanization; encroachment by exotic plant species, disruption of normal fire cycles; off-highway vehicle (OHV) use, hybridization, and the inadequacy of existing regulatory mechanisms. This rule implements the Federal protection and recovery provisions afforded by the Act for these species. These plant species were proposed for listing on October 2, 1995 (60 FR 51433). Another species proposed as threatened on that

date, *Nolina interrata* (Dehesa beargrass), is withdrawn in this same **Federal Register** part, to be published on the same day as this final rule.

DATES: Effective November 12, 1998.

ADDRESSES: The complete file for this rule is available for inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, Carlsbad Field Office, 2730 Loker Avenue West, Carlsbad, California 92008.

FOR FURTHER INFORMATION CONTACT: Loren Hays, Chief Branch of Listing and Recovery or Dr. Gary D. Wallace, Botanist at the above address (telephone 760/431-9440; facsimile 760/431-9624).

SUPPLEMENTARY INFORMATION:

Background

Berberis nevinii (Nevin's barberry) and *Ceanothus ophiochilus* (Vail Lake ceanothus) occur in restricted, localized populations in the interior foothills of Los Angeles, Riverside and San Bernardino Counties in California; *Fremontodendron mexicanum* occurs in